FUJIFILM

Pelco-D Protocol Specification

for SX1600

APR.07.2023

Version 1.00.0

FUJIFILM

Change history

Ver.	Date			Revision
1.00	2023/4/7			First version

Table of contents

1 Summary

This document specifies the Pelco-D protocol in FUJIFILM CCTV lens / cameras. The CCTV lens / cameras to which this version is applied are as follows.

Applicable model: Long Range Surveillance Camera "FUJIFILM SX1600", FW Ver. **1.00** and later

2 Overview

Pelco-D is a protocol proposed by Pelco, mainly for controlling a PTZ camera. It is a commonly published protocol and is adopted from SX800 because it is being standardized worldwide.

3 Overview about Pelco-D

The Pelco-D protocol is a master-slave type protocol, and up to 255 slaves can be connected to one master. The slave side does not transmit data without receiving a request from the master. The address that can be set as this specification is 31 patterns of 1 to 31 at maximum (※ RS485_ID is 1 to 31). Communication shall be set according to the following contents.

■ Serial data format

Baudrate: 2400, 4800, 9600, 19200, 38400, 115200

StartBit: 1

DataLength: 8

StopBit: 1

Parity: None

3.1 Send command format

Byte	1	2	3	4	5	6	7
	SYNC	ADDR	CMND1	CMND2	DATA1	DATA2	CKSM
	0xFF	—	—	—	—	—	—

1. Always set 0xFF to SYNC
2. Set address 1 to 31 to ADDR
3. CMND1 is an extension command (* When adding a command, register this)
4. CMND2 is a command for basic operation
5. Set DATA1 and DATA2 according to the contents of CMND1 and CMND2
6. Set the sum of 2nd to 6th Bytes in 8 bits to CKSM

3. 2 Receive command format

The receive command format differs depending on the command. The commands defined by Pelco are as follows,

3.2.1 Receive command (General Response)

Reply as 4 Bytes data.

Byte	1	2	3	4
	SYNC	ADDR	ALARMS	CKSM
	0xFF	—	0x00	—

1. Always set 0xFF to SYNC
2. Set address 1 to 31 to ADDR
3. Set 0x00 to ALARMS
4. Set the sum of the received CKSM and ALARMS in 8 bits to CKSM

3.2.2 Receive command (Extended Response)

Reply as 7 Bytes data.

Byte	1	2	3	4	5	6	7
	SYNC	ADDR	RESP1	RESP2	DATA1	DATA2	CKSM
	0xFF	—	—	—	—	—	—

1. Always set 0xFF to SYNC
2. Set address 1 to 31 to ADDR
3. Set received CMND1 and CMND2 to RESP1 and RESP2
4. Set specific data for each commands to DATA1 and DATA2
5. Set the sum of ADDR to DATA2 in 8 bits is set to CKSM

3.2.3 Receive command (Query Response)

Reply as 18 Bytes data

Byte	1	2	3	····	17	18
	SYNC	ADDR	DATA1	····	DATA15	CKSM
	0xFF	—	—	····	—	—

1. Always set 0xFF to SYNC
2. Set address 1 to 31 to ADDR
3. Set specific data for each commands to DATA1 to DATA15
4. Set the sum of ADDR to DATA15 in 8 bits to CKSM

   * As for Query Serial Number command in this specification, set the sum of ADDR to DATA 15 in 8 bits to CKSM

3.2.4 Receive command(Extended Response2)

Reply as 7 Bytes data

* The difference from Extended Response (3.2.2) is that new CMD1 and CMD2 are used instead of CMD1 and CMD2 received in RESP1 and RESP2.

Byte	1	2	3	4	5	6	7
	SYNC	ADDR	RESP1	RESP2	DATA1	DATA2	CKSM
	0xFF	—	—	—	—	—	—

1. Always set 0xFF to SYNC
2. Set address 1 to 31 to ADDR
3. Set RESP1、RESP2
4. Set specific data for each commands to DATA1 and DATA2
5. Set the sum of 2nd to 6th Bytes in 8 bits to CKSM

4 Functional specifications

The address used for communication and the baud rate are switched from software by setting.

Address => 1 to 31 (When shipped from factory or after reset, RS485_ID=7 (= device setting ID))

Baud rate => 0 to 5 [Value: 0: 2400, 1: 4800, 2: 9600, 3: 19200, 4: 38400, 5: 115200] (When shipped from the factory or after reset, Baud rate is "2: 9600")

Pelco has specified that all commands of Standard Command described in the next chapter are automatically stopped after driving for up to 15 seconds for runaway detection, and this specification also follows this. As for timeout, if the drive command is received again before the timeout occurs, the timer is reset.

Notes on communicating with the SX1600

- SX1600 does not have the ability to queue commands, so if you issue the next send command before receiving the receive command for the previous send command, the previous command will be discarded

5 Command details

The commands are classified into commands defined by Pelco and commands uniquely defined in this specification.

The commands defined by Pelco are further classified into "**Standard Command**", "**Extended Command**", and "**Original Command**".

5.1 Standard Command

Basic commands defined by Pelco-D.

5.1.1 Send command

Since Bit3-Bit7 of CMND1 is not used in the latest Pelco-D, this specification does not support either.

Bit 0 to Bit 4 of CMND2 is used as a PTZ camera control command only when this camera is in HOST mode. (※ for pan head control)

Byte 3, CMND:1							
Bit 7	Bit 6	Bit 5	Bit 4	Bit 3	Bit 2	Bit 1	Bit 0
Sense	0	0	Auto/Manual Scan	Camera On/Off	Iris Close	Iris Open	Focus Near
Byte 4, CMND:2							
Bit 7	Bit 6	Bit 5	Bit 4	Bit 3	Bit 2	Bit 1	Bit 0
Focus Far	Zoom Wide	Zoom Tele	Down	Up	Left	Right	Always 0

5.1.2 Receive command

Byte	1	2	3	4
	SYNC	ADDR	ALARMS	CKSM
	0xFF	―	0x00	―

1. Always set 0xFF to SYNC
2. Set address 1 to 31 to ADDR
3. Set 0x00 to ALARMS
4. Set the sum of the received CKSM and ALARMS in 8 bits to CKSM

5.2 Extended Command

Extended command specified by Pelco-D.

5.2.1 Set Zoom Speed

Command to change zoom speed (from version 2.00, use 5.13.1, “Set Zoom Speed Ex”)

■ Send command

Byte	1	2	3	4	5	6	7
	SYNC	ADDR	CMND1	CMND2	DATA1	DATA2	CKSM
	0xFF	—	0x00	0x25	0x00	ZOOM_SPEED	—

1. Always set 0xFF to SYNC
2. Set address 1 to 31 to ADDR
3. Set the command according to the purpose to CMND1 and CMND2
4. Set 0x00 to DATA1
5. Set the speed (ZOOM_SPEED) according to the purpose in DATA 2
6. Set the sum of 2nd to 6th Bytes in 8 bits to CKSM

■ Argument of ZOOM_SPEED

DATA2	Description	New commands executed by this command (5.13.1, “Set Zoom Speed Ex”)
0x00	Slowest Speed (=Low Medium Speed)	The new command 0x07 is executed internally.
0x01	Low Medium Speed	The new command 0x05 is executed internally.
0x02	High Medium Speed	The new command 0x03 is executed internally.
0x03	Highest Speed (=High Medium Speed)	The new command 0x01 is executed internally.
Others	Low Medium Speed	The new command 0x05 is executed internally.

Note: With firmware version 1.60 and earlier, 0x00 and 0x02 select the same zoom speeds as 0x01 and 0x03, respectively

■ Receive command

Byte	1	2	3	4
	SYNC	ADDR	ALARMS	CKSM
	0xFF	—	0x00	—

1. Always set 0xFF to SYNC
2. Set address 1 to 31 ADDR
3. Set 0x00 to ALARMS
4. Set the sum of the received CKSM and ALARMS in 8 bits to CKSM

5.2.2 Set Focus Speed

Command to change focus speed (from version 2.00, use 5.13.2, “Set Focus Speed Ex”)

■ Send command

Byte	1	2	3	4	5	6	7
	SYNC	ADDR	CMND1	CMND2	DATA1	DATA2	CKSM
	0xFF	—	0x00	0x27	0x00	FOCUS_SPEED	—

1. Always set 0xFF to SYNC
2. Set address 1 to 31 to ADDR
3. Set the command according to the purpose to CMND1 and CMND2
4. Set 0x00 to DATA1
5. Set the speed (FOCUS_SPEED) according to the purpose in DATA 2
6. Set the sum of ADDR to DATA2 in 8 bits to CKSM

Argument of FOCUS_SPEED

DATA2	Description	New commands executed by this command (5.13.2, “Set Focus Speed Ex”)
0x00	Slowest Speed (=High Medium Speed)	The new command 0x07 is executed internally.
0x01	Low Medium Speed (=High Medium Speed)	The new command 0x05 is executed internally.
0x02	High Medium Speed	The new command 0x03 is executed internally.
0x03	Highest Speed (=High Medium Speed)	The new command 0x01 is executed internally.
Others	High Medium Speed	The new command 0x03 is executed internally.

Note: With firmware version 1.60 and earlier, all arguments select the same focus speed.

■ Receive command

Byte	1	2	3	4
	SYNC	ADDR	ALARMS	CKSM
	0xFF	－	0x00	－

1. Always set 0xFF to SYNC
2. Set address 1 to 31 to ADDR
3. Set 0x00 to ALARMS
4. Set the sum of the received CKSM and ALARMS in 8 bits to CKSM

5.2.3 Auto focus on/off

Command to switch auto focus on / off / quick AF

■ Send command

Byte	1	2	3	4	5	6	7
	SYNC	ADDR	CMND1	CMND2	DATA1	DATA2	CKSM
	0xFF	－	0x00	0x2B	0x00	AUTO F_CTL	－

1. Always set 0xFF to SYNC
2. Set address 1 to 31 to ADDR
3. Set the command according to the purpose to CMND1 and CMND2
4. Set 0x00 to DATA1
5. Set AUTO F_CTL to DATA2
6. Set the sum of ADDR to DATA2 in 8 bits to CKSM

■ AUTO F_CTL

DATA2	Description
0x00	AF on
0x01	AF off (MF)
0x02	Quick AF
Others	AF on

■ Receive command

Byte	1	2	3	4
	SYNC	ADDR	ALARMS	CKSM
	0xFF	—	0x00	—

1. Always set 0xFF to SYNC
2. Set address 1 to 31 to ADDR
3. Set 0x00 to ALARMS
4. Set the sum of the received CKSM and ALARMS in 8 bits to CKSM

5.2.4 Auto Iris on/off

Command to switch auto iris on / off

■ Send command

Byte	1	2	3	4	5	6	7
	SYNC	ADDR	CMND1	CMND2	DATA1	DATA2	CKSM
	0xFF	—	0x00	0x2D	0x00	AUTO I_CTL	—

1. Always set 0xFF to SYNC
2. Set 1 to 31 to ADDR
3. Set the command according to the purpose to CMND1 and CMND2
4. Set 0x00 to DATA1
5. Set AUTO I_CTL to DATA2
6. Set the sum of ADDR to DATA2 in 8 bits to CKSM

■ Argument of AUTO I_CTL

DATA2	Description
0x00	Off (Manual iris)
0x01	On (Auto iris)
Others	On (Auto iris)

■ Receive command

Byte	1	2	3	4
	SYNC	ADDR	ALARMS	CKSM
	0xFF	—	0x00	—

1. Always set 0xFF to SYNC
2. Set address 1 to 31 to ADDR
3. Set 0x00 to ALARMS
4. Set the sum of the received CKSM and ALARMS in 8 bits to CKSM

5.2.5 AGC auto/on/off

Command to switch AGC standard/off/Hyper

■ Send command

Byte	1	2	3	4	5	6	7
	SYNC	ADDR	CMND1	CMND2	DATA1	DATA2	CKSM
	0xFF	—	0x00	0x2F	0x00	AGC_CTL	—

1. Always set 0xFF to SYNC
2. Set address 1 to 31 to ADDR
3. Set the command according to the purpose to CMND1 and CMND2
4. Set 0x00 to DATA1
5. Set AGC_CTL to DATA2
6. Set the sum of ADDR to DATA2 in 8 bits to CKSM

■ Argument of AGC_CTL

DATA2	Setting
0x00	Standard
0x01	Off
0x02	Hyper
Others	Standard

■ Receive command

Byte	1	2	3	4
	SYNC	ADDR	ALARMS	CKSM
	0xFF	—	0x00	—

1. Always set 0xFF to SYNC
2. Set address 1 to 31 to ADDR
3. Set 0x00 to ALARMS
4. Set the sum of the received CKSM and ALARMS in 8 bits to CKSM

5.2.6 Backlight compensation on/off

Command to switch backlight compensation on / off

■ Send command

Byte	1	2	3	4	5	6	7
	SYNC	ADDR	CMND1	CMND2	DATA1	DATA2	CKSM
	0xFF	—	0x00	0x31	0x00	BLC_CTL	—

1. Always set 0xFF to SYNC
2. Set address 1 to 31 to ADDR
3. Set the command according to the purpose to CMND1 and CMND2
4. Set 0x00 to DATA1
5. Set BLC_CT to DATA2
6. Set the sum of ADDR to DATA2 in 8 bits to CKSM

■ Argument of BLC_CTL

DATA2	Description
0x00	OFF
0x01	1: Soft
0x02	2: Hard
Others	OFF

■ Receive command

Byte	1	2	3	4
	SYNC	ADDR	ALARMS	CKSM
	0xFF	—	0x00	—

1. Always set 0xFF to SYNC
2. Set address 1 to 31 to ADDR
3. Set 0x00 to ALARMS
4. Set the sum of the received CKSM and ALARMS in 8 bits to CKSM

5.2.7 <Reserved>

5.2.8 Set Zoom Position

Command to set zoom position

■ Send command

Byte	1	2	3	4	5	6	7
	SYNC	ADDR	CMND1	CMND2	DATA1	DATA2	CKSM
	0xFF	—	0x00	0x4F	ZOOM_P MSB	ZOOM_P LSB	—

1. Always set 0xFF to SYNC
2. Set address 1 to 31 to ADDR
3. Set the command according to the purpose to CMND1 and CMND2
4. Set the zoom position (MSB) according to the purpose to DATA1
5. Set the zoom position (LSB) according to the purpose to DATA2
6. Set the sum of ADDR to DATA2 in 8 bits to CKSM

■ Argument of ZOOM_P

DATA1,DATA2	Description
0～65535	Zoom Position

■ Receive command

Byte	1	2	3	4
	SYNC	ADDR	ALARMS	CKSM
	0xFF	—	0x00	—

1. Always set 0xFF to SYNC
2. Set address 1 to 31 to ADDR
3. Set 0x00 to ALARMS
4. Set the sum of the received CKSM and ALARMS in 8 bits to CKSM

5.2.9 Set Remote Baud Rate

Command to set Remote baud rate

■ Send command

Byte	1	2	3	4	5	6	7
	SYNC	ADDR	CMND1	CMND2	DATA1	DATA2	CKSM
	0xFF	—	0x00	0x67	0x00	SET B_RARE	—

1. Always set 0xFF to SYNC
2. Set address 1 to 31 to ADDR
3. Set the baud rate according to the purpose to CMND1 and CMND2
4. Set 0x00 to DATA1
5. Set the baud rate accordance with the oppose to DATA2
6. Set the sum of ADDT to DATA2 in 8 bits to CKSM

■ Argument of SET B_RARE

DATA	Baud rate
0x00	2400
0x01	4800
0x02	9600(Default)
0x03	19200
0x04	38400
0x05	115200
Others	9600

■ Receive command

Byte	1	2	3	4
	SYNC	ADDR	ALARMS	CKSM
	0xFF	—	0x00	—

1. Always set 0xFF to SYNC
2. Set address 1 to 31 to ADDR
3. Set 0xoo to ALARMS
4. Set the sum of the received CKSM and ALARMS in 8 bits to CKSM

5.2.10 Time Set Opcode

Command to set the clock and get the report of clock setting

■ Send command

Byte	1	2	3	4	5	6	7
	SYNC	ADDR	CMND1	CMND2	DATA1	DATA2	CKSM
	0xFF	—	SUB OP CODE	0x77	Various	Various	—

1. Always set 0xFF to SYNC
2. Set address 1 to 31 to ADDR
3. Set SUB OP CODE to CMND1
4. Set the command accordance with the purpose to CMND2
5. Set the value which are selected by SUB OP CODE to DATA1 and DATA2
6. Set the sum of ADDR to DATA2 in 8 bits to CKSM

■ Argument of SUB OP CODE

Set binary numbers to Second, Minute, Hour, Month, Day, and Year.
In addition, for example, when 24 or more numbers is put into Hour, it is ignored.

CMND1	DATA1	DATA2	Description
0x00	Second		Set second (0x00-0x3B) and synchronize time
0x01	0x00	0x00	Report second
0x02	Hour	Minute	Set hour(0x00-0x17) and minute
0x03	0x00	0x00	Report hour and minute
0x04	Month	Day	Set month(0x01-0x0C) and date(0x01-0x1F)
0x05	0x00	0x00	Report month and date
0x06	Year		Set year (2019 => 0x07E3)
0x07	0x00	0x00	Report year
Other	0x00	0x00	Invalid (no reaction)

■ Receive command

Byte	1	2	3	4	5	6	7
	SYNC	ADDR	RESP1	RESP2	DATA1	DATA2	CKSM
	0xFF	—	—	—	Various	Various	—

1. Always set 0xFF to SYNC
2. Set address 1 to 31 to ADDR
3. As for RESP1, set 0x01(ACK) or 0x00(NAK) when setting and set received CMND1 when getting the report.
4. As for RESP2, set 0x01 when setting, and set received CMND2 when getting the report.
5. Set the value selected by SUB OP CODE to DATA1 and DATA2
6. Set the sum of ADDR to DATA2 in 8 bits to CKSM

■ Argument of SUB OP CODE

CMND1 of Send command	RESP1	RESP2	DATA1	DATA2	Description
0x00	0x01 or 0x00	0x01	0x00	0x00	Receive second (0x00-0x3B) and synchronize time
0x01	0x01	0x77	Second		Report second
0x02	0x01 or 0x00	0x01	0x00	0x00	Set hour(0x00-0x17) and minute
0x03	0x03	0x77	Hour	Minute	Report hour and minute
0x04	0x01 or 0x00	0x01	0x00	0x00	Set month(0x01-0x0C) and date(0x01-0x1F)
0x05	0x05	0x77	Month	Day	Report month and date
0x06	0x01 or 0x00	0x00	0x00	0x00	Set year (2019 => 0x07E3)
0x07	0x07	0x77	Year		Report year
Other	0x00	0x00	0x00	0x00	Invalid (no reaction)

5.2.11 Query Zoom Position (Standard)

A command that returns the zoom position (the value returned is the same as that returned by commands 5.3.2, “Query Zoom Position” and 5.3.23, “Query Manual Setting”).

■ Send command

Byte	1	2	3	4	5	6	7
	SYNC	ADDR	CMND1	CMND2	DATA1	DATA2	CKSM
	0xFF	—	0x00	0x55	0x00	0x00	—

1. Always set 0xFF to SYNC
2. Set address 1 to 31 to ADDR
3. Set the command according to the purpose to CMND1 and CMND2
4. Set 0x00 to DATA1 and DATA2 (for Response)
5. Set the sum of ADDR to DATA2 in 8 bits to CKSM

■ Receive command（0x5D:Query Zoom Position Response）

Byte	1	2	3	4	5	6	7
	SYNC	ADDR	RESP1	RESP2	DATA1	DATA2	CKSM
	0xFF	—	0x00	0x5D	—	—	—

1. Always set 0xFF to SYNC
2. Set address 1 to 31 to ADDR
3. Set 0x5D to RESP2.
4. Set requested value to DATA1 and DATA2 (Ex. 0xFF00 →DATA1:0xFF、DATA2、0x00)
5. Set the sum of ADDR to DATA2 in 8 bits to CKSM

5.3 FF Extended Command (Original commands of this specification)

Commands specified by FUJIFILM in Extended Command

The calculation method of CKSM is omitted in this chapter. That of [Chapter 3 Pelco-D outline] is adopted.

(0) Send command

Set the sum of ADDR to DATA2 in 8bit to CKSM

(1) Receive command (General Response):

Set the sum of the received CKSM and ALARMS in 8bit in CKSM

(2) Receive command (Extended Response):

Set the sum of ADDR to DATA2 in 8bit to CKSM

(3) Receive command (Query Response):

Set the sum of ADDR to DATA2 in 8bit to CKSM **(Original specification by FUJIFILM)**

(4) Receive command (Original specification by FUJIFILM)

Set the sum of ADDR to DATA2 in 8bit to CKSM

5.3.1 Query Focus Position

Command to get the focus position

■ Send command

Byte	1	2	3	4	5	6	7
	SYNC	ADDR	CMND1	CMND2	DATA1	DATA2	CKSM
	0xFF	—	0x00	0x81	0x00	0x00	—

1. Always set 0xFF to SYNC
2. Set address 1 to 31 to ADDR
3. Set the command according to the purpose to CMND1 and CMND2
4. Set 0x00 to DATA1 and DATA2(for Response)
5. Set the sum of ADDR to DATA2 in 8bit to CKSM

■ Receive command

Byte	1	2	3	4	5	6	7
	SYNC	ADDR	RESP1	RESP2	DATA1	DATA2	CKSM
	0xFF	—	0x00	0x81	—	—	—

1. Always set 0xFF to SYNC
2. Set address 1 to 31 to ADDR
3. Set received CMND1 and CMND2 to RESP1 and RESP2.
4. Set requested value to DATA1 and DATA2 (Ex. 0xFF00 -> DATA1:0xFF、DATA2、0x00)
5. CKSM is the sum of ADDR to DATA2 in 8bit

5.3.2 Query Zoom Position

Command to get the zoom position (The data to be obtained by 5.2.11 Query Zoom Position command is the same)

■ Send command

Byte	1	2	3	4	5	6	7
	SYNC	ADDR	CMND1	CMND2	DATA1	DATA2	CKSM
	0xFF	—	0x00	0x83	0x00	0x00	—

1. Always set 0xFF to SYNC
2. Set address 1 to 31 to ADDR
3. Set the command according to the purpose to CMND1 and CMND2
4. Set 0x00 to DATA1 and DATA2 (for Response)
5. Set the sum of ADDR to DATA2 in 8 bits to CKSM

■ Receive command

Byte	1	2	3	4	5	6	7
	SYNC	ADDR	RESP1	RESP2	DATA1	DATA2	CKSM
	0xFF	—	0x00	0x83	—	—	—

1. Always set 0xFF to SYNC
2. Set address 1 to 31 to ADDR
3. Set received CMND1 and CMND2 to RESP1 and RESP2.
4. Set requested value to DATA1 and DATA2 (Ex. 0xFF00 →DATA1:0xFF、DATA2、0x00)
5. Set the sum of ADDR to DATA2 in 8 bits to CKSM

5.3.3 <Reserved>

5.3.4 <Reserved>

5.3.5 Query Serial Number

Command to get Serial number

■ Send command

Byte	1	2	3	4	5	6	7
	SYNC	ADDR	CMND1	CMND2	DATA1	DATA2	CKSM
	0xFF	—	0x00	0x89	0x00	0x00	—

1. Always set 0xFF to SYNC
2. Set address 1 to 31 to ADDR
3. Set the command according to the purpose to CMND1 and CMND2
4. Set 0x00 to DATA1 and DATA2
5. Set the sum of ADDR to DATA2 in 8 bits to CKSM

■ Receive command

Byte	1	2	3	4	5	6	7	8	9	10	11 - 17	18
	SYNC	ADDR	DATA1	DATA2	DATA3	DATA4	DATA5	DATA6	DATA7	DATA8	DATA9-DATA15	CKSM
	0xFF	—	—	—	—	—	—	—	—	—	0x00	—

1. Always set 0xFF to SYNC
2. Set address 1 to 31 to ADDR
3. Set Serial number as ASCII codes to DATA1 to DATA8
4. Set 0x00 to DATA9 to DATA15
5. Set the sum of ADDR to DATA15 in 8 bits to CKSM (* Note that it is different from Query Response)

5.3.6 Query Few Version

Command to get FW (Firmware) Version

■ Send command

Byte	1	2	3	4	5	6	7
	SYNC	ADDR	CMND1	CMND2	DATA1	DATA2	CKSM
	0xFF	—	0x00	0x8B	0x00	0x00	—

1. Always set 0xFF to SYNC
2. Set address 1 to 31 to ADDR
3. Set the command according to the purpose to CMND1 and CMND2
4. Set 0x00 to DATA1 (For Response)
5. DATA2 is shown below table
6. Set the sum of ADDR to DATA2 in 8 bits to CKSM

■ Argument of DATA2

DATA2	Description
0x00	Request of System FW version
0x01	Request of Camera FW version
0x02	Request of Lens FW version

■ Receive command

Byte	1	2	3	4	5	6	7
	SYNC	ADDR	RESP1	RESP2	DATA1	DATA2	CKSM
	0xFF	—	0x00	0x8B	—	—	—

1. Always set 0xFF to SYNC
2. Set address 1 to 31 to ADDR
3. Set received CMND1 and CMND2 to RESP1 and RESP2
4. Set major version to DATA and minor version to DATA2 (Ex. Ver1.10=DATA1:0x01,DATA2:0x10, Ver2.0A=DATA1:0x02,DATA2:0x0A)
5. Set the sum of ADDT to DATA2 in 8 bits to CKSM

5.3.7 Query Lens Status

Command to get the lens status

■ Send command

Byte	1	2	3	4	5	6	7
	SYNC	ADDR	CMND1	CMND2	DATA1	DATA2	CKSM
	0xFF	—	0x00	0x8D	0x00	0x00	—

1. Always set 0xFF to SYNC
2. Set address 1 to 31 to ADDR
3. Set the command according to the purpose to CMND1 and CMND2
4. Set 0x00 to DATA1 and DATA2 (For Response)
5. Set the sum of ADDR to DATA2 in 8 bits to CKSM

■ Receive command

Byte	1	2	3	4	5	6	7
	SYNC	ADDR	RESP1	RESP2	DATA1	DATA2	CKSM
	0xFF	—	0x00	0x8D	—	0x00	—

1. Always set 0xFF to SYNC
2. Set address 1 to 31 to ADDR
3. Set received CMND1 and CMND2 to RESP1 and RESP2
4. Set the lens status to DATA (See below)
5. Set 0x00 to DATA2
6. Set the sum of ADDR to DATA2 in 8 bits to CKSM

■ DATA1 format

DATA1	Lens status	
0x00	No error	the lens work normally
0x01	Lens error	the zoom and/or the focus was stopped forcibly

5.3.8 Set Focus Position

Command to get the focus position

■ Send command

Byte	1	2	3	4	5	6	7
	SYNC	ADDR	CMND1	CMND2	DATA1	DATA2	CKSM
	0xFF	—	0x00	0x8F	FOCUS MSB	FOCUS LSB	—

1. Always set 0xFF to SYNC
2. Set address 1 to 31 to ADDR
3. Set the command according to the purpose to CMND1 and CMND2
4. As for DATA1 and DATA2, see below
5. Set the sum of ADDR to DATA2 in 8 bits to CKSM

DATA1	Value
0x00～0xFF	FOCUS MSB

DATA2	Description
0x00～0xFF	FOCUS LSB

■ Receive command

Byte	1	2	3	4
	SYNC	ADDR	ALARMS	CKSM
	0xFF	—	0x00	—

1. Always set 0xFF to SYNC
2. Set address 1 to 31 to ADDR
3. Set 0x00 to ALARMS
4. Set the sum of received CKSM and ALARMS to CKSM

5.3.9 Set Manual Iris

Command to set F number

■ Send command

Byte	1	2	3	4	5	6	7
	SYNC	ADDR	CMND1	CMND2	DATA1	DATA2	CKSM
	0xFF	—	0x00	0x91	0x00	MANU_FNO	—

1. Always set 0xFF to SYNC
2. Set address 1 to 31 to ADDR
3. Set the command according to the purpose to CMND1 and CMND2
4. Set 0x00 to DATA1
5. As for DATA2, see below
6. Set the sum of ADDR to DATA2 in 8 bits to CKSM

DATA2	F number (at the wide end)
0x01	F11
0x02	F11
0x03	F11
0x04	F11
0x05	F11
0x06	F11
0x07	F8
0x08	F9

0x09	F10
0x0A	F11
0x0B	F13
0x0C	F14
0x0D	F16
0x0E	F18
0x0F	F20
0x10	F22
0x11	F25
0x12	F29
0x13	F32
Others	F11

■ Received command

Byte	1	2	3	4
	SYNC	ADDR	ALARMS	CKSM
	0xFF	—	0x00	—

1. Always set 0xFF to SYNC
2. Set address 1 to 31 to ADDR
3. Set 0x00 to ALARMS
4. Set the sum of received CKSM and ALARMS to CKSM

5.3.10 Set Shutter Limit on Auto

Command to set the lowest limit of the shutter sped at AE

■ Send command

Byte	1	2	3	4	5	6	7
	SYNC	ADDR	CMND1	CMND2	DATA1	DATA2	CKSM
	0xFF	—	0x00	0x93	0x00	A_SHUT_LIM	—

1. Always set 0xFF to SYNC
2. Set address 1 to 31 to ADDR
3. Set the command according to the purpose to CMND1 and CMND2
4. Set 0x00 to DATA1
5. As for DATA2, see below
6. Set the sum of ADDR to DATA2 in 8 bits to CKSM

DATA2	Description
0x00	Manual shutter : The value set by SetManualShutterSpeed command (0x00,0x95)
0x01	Auto shutter : Lowest limit 1/8 sec
0x02	Auto shutter : Lowest limit 1/15 sec
0x03	Auto shutter : Lowest limit 1/30 sec
0x04	Auto shutter : Lowest limit 1/60 sec
0x05	Auto shutter : Lowest limit 1/125 sec
Others	Auto shutter : Lowest limit 1/30 sec

■ Receive command

Byte	1	2	3	4
	SYNC	ADDR	ALARMS	CKSM
	0xFF	—	0x00	—

1. Always set 0xFF to SYNC
2. Set address 1 to 31 to ADDR
3. Set 0x00 to ALARMS
4. Set the sum of received CKSM and ALARMS to CKSM

5.3.11 Set Manual Shutter Speed

Command to set the shutter speed

■ Send command

Byte	1	2	3	4	5	6	7
	SYNC	ADDR	CMND1	CMND2	DATA1	DATA2	CKSM
	0xFF	—	0x00	0x95	0x00	MANU_SHUT	—

1. Always set 0xFF to SYNC
2. Set address 1 to 31 to ADDR
3. Set the command according to the purpose to CMND1 and CMND2
4. Set 0x00 to DATA1
5. As for DATA2, see below
6. Set the sum of ADDR to DATA2 in 8 bits to CKSM

DATA2	Shutter sped (MANU_SHUT) [sec]
0x01	1
0x02	1/1.3
0x03	1/1.6
0x04	1/2
0x05	1/2.5
0x06	1/3
0x07	1/4
0x08	1/5
0x09	1/6

0x0A	1/8
0x0B	1/10
0x0C	1/13
0x0D	1/15
0x0E	1/20
0x0F	1/25
0x10	1/30
0x11	1/40
0x12	1/50
0x13	1/60
0x14	1/80
0x15	1/100
0x16	1/120
0x17	1/125
0x18	1/160
0x19	1/200
0x1A	1/250
0x1B	1/320
0x1C	1/400
0x1D	1/500
0x1E	1/640
0x1F	1/800
0x20	1/1000
0x21	1/1250

0x22	1/1600
0x23	1/2000
0x24	1/2500
0x25	1/3200
0x26	1/4000
0x27	1/5000
0x28	1/6400
0x29	1/8000
0x2A	1/10000
0x2B	1/12800
0x2C	1/16000
0x2D	1/20000
0x2E	1/32000
Others	1/30

■ Receive command

Byte	1	2	3	4
	SYNC	ADDR	ALARMS	CKSM
	0xFF	—	0x00	—

1. Always set 0xFF to SYNC
2. Set address 1 to 31 to ADDR
3. Set 0x00 to ALARMS
4. Set the sum of received CKSM and ALARMS to CKSM

5.3.12 Query Manual Shutter Speed

Command to get the shutter speed setting

■ Send command

Byte	1	2	3	4	5	6	7
	SYNC	ADDR	CMND1	CMND2	DATA1	DATA2	CKSM
	0xFF	—	0x00	0x97	0x00	0x00	—

1. Always set 0xFF to SYNC
2. Set address 1 to 31 to ADDR
3. Set the command according to the purpose to CMND1 and CMND2
4. Set 0x00 to DATA1 and DATA2 (For Response)
5. Set the sum of ADDT to DATA2 in 8 bits to CKSM

■ Receive command

Byte	1	2	3	4	5	6	7
	SYNC	ADDR	RESP1	RESP2	DATA1	DATA2	CKSM
	0xFF	—	0x00	0x97	—	0x00	—

1. Always set 0xFF to SYNC
2. Set address 1 to 31 to ADDR
3. Set received CMND1 and CMND2 to RESP1 and RESP2
4. Set the shutter speed value to DATA1 (See below)
5. Set 0x00 to DATA2
6. Set the sum of ADDR to DATA2 in 8 bits to CKSM

■ Shute speed value for DATA1

DATA1	Shutter speed value [sec]
0x01	1
0x02	1/1.3
0x03	1/1.6
0x04	1/2
0x05	1/2.5
0x06	1/3
0x07	1/4
0x08	1/5
0x09	1/6
0x0A	1/8
0x0B	1/10
0x0C	1/13
0x0D	1/15
0x0E	1/20
0x0F	1/25
0x10	1/30
0x11	1/40
0x12	1/50
0x13	1/60
0x14	1/80
0x15	1/100
0x16	1/120
0x17	1/125

0x18	1/160
0x19	1/200
0x1A	1/250
0x1B	1/320
0x1C	1/400
0x1D	1/500
0x1E	1/640
0x1F	1/800
0x20	1/1000
0x21	1/1250
0x22	1/1600
0x23	1/2000
0x24	1/2500
0x25	1/3200
0x26	1/4000
0x27	1/5000
0x28	1/6400
0x29	1/8000
0x2A	1/10000
0x2B	1/12800
0x2C	1/16000
0x2D	1/20000
0x2E	1/32000

5.3.13 Set Manual ISO

Command to set the ISO speed (sensitivity)

■ Send command

Byte	1	2	3	4	5	6	7
	SYNC	ADDR	CMND1	CMND2	DATA1	DATA2	CKSM
	0xFF	—	0x00	0x99	0x00	MANU_ISO	—

1. Always set 0xFF to SYNC
2. Set address 1 to 31 to ADDR
3. Set the command according to the purpose to CMND1 and CMND2
4. Set 0x00 to DATA1
5. As for DATA2, see below
6. Set the sum of ADDR to DATA2 in 8 bits to CKSM

■ ISO speed value (MANU_ISO for DATA2

DATA2	ISO speed (MANU_ISO)
0x01	ISO 400
0x02	ISO 500
0x03	ISO 640
0x04	ISO 800
0x05	ISO 1000
0x05	ISO 1250
0x07	ISO 1600
0x08	ISO 2000
0x09	ISO 2500

0x0A	ISO 3200
0x0B	ISO 4000
0x0C	ISO 5000
0x0D	ISO 6400
0x0E	ISO 8000
0x0F	ISO 10000
0x10	ISO 12800
0x11	ISO 25600
0x12	ISO 51200
0x13	ISO 102400
0x14	ISO 204800
0x15	ISO 409600
0x16	ISO 819200
Others	ISO 400

■ Receive command

Byte	1	2	3	4
	SYNC	ADDR	ALARMS	CKSM
	0xFF	—	0x00	—

1. Always set 0xFF to SYNC
2. Set address 1 to 31 to ADDR
3. Set 0x00 to ALARMS
4. Set the sum of received CKSM and ALARMS to CKSM

5.3.14 Query Manual ISO

Command to get the ISO speed value

■ Send command

Byte	1	2	3	4	5	6	7
	SYNC	ADDR	CMND1	CMND2	DATA1	DATA2	CKSM
	0xFF	—	0x00	0x9B	0x00	0x00	—

1. Always set 0xFF to SYNC
2. Set address 1 to 31 to ADDR
3. Set the command according to the purpose to CMND1 and CMND2
4. Set 0x00 to DATA1 and DATA2 (for Response)
5. Set the sum of ADDT to DATA2 in 8 bits to CKSM

■ Receive command

Byte	1	2	3	4	5	6	7
	SYNC	ADDR	RESP1	RESP2	DATA1	DATA2	CKSM
	0xFF	—	0x00	0x9B	—	0x00	—

1. Always set 0xFF to SYNC
2. Set address 1 to 31 to ADDR
3. Set received CMND1 and CMND2 to RESP1 and RESP2
4. Set Manual ISO speed value to DATA1 (see below)
5. Set 0x00 to DATA2
6. Set the sum of ADDR to DATA2 in 8 bits to CKSM

■ ISO speed value for DATA1

DATA1	ISO speed
0x01	ISO 400
0x02	ISO 500
0x03	ISO 640
0x04	ISO 800
0x05	ISO 1000
0x05	ISO 1250
0x07	ISO 1600
0x08	ISO 2000
0x09	ISO 2500
0x0A	ISO 3200
0x0B	ISO 4000
0x0C	ISO 5000
0x0D	ISO 6400
0x0E	ISO 8000
0x0F	ISO 10000
0x10	ISO 12800
0x11	ISO 25600
0x12	ISO 51200
0x13	ISO 102400
0x14	ISO 204800
0x15	ISO 409600
0x16	ISO 819200

5.3.15 Query Manual Iris

Command to get the F value of the iris

■ Send command

Byte	1	2	3	4	5	6	7
	SYNC	ADDR	CMND1	CMND2	DATA1	DATA2	CKSM
	0xFF	—	0x00	0x9D	0x00	0x00	—

1. Always set 0xFF to SYNC
2. Set address 1 to 31 to ADDR
3. Set the command according to the purpose to CMND1 and CMND2
4. Set 0x00 to DATA1 and DATA2 (for Response)
5. Set the sum of ADDR to DATA2 in 8 bits to CKSM

■ Receive command

Byte	1	2	3	4	5	6	7
	SYNC	ADDR	RESP1	RESP2	DATA1	DATA2	CKSM
	0xFF	—	0x00	0x9D	—	0x00	—

1. Always set 0xFF to SYNC
2. Set address 1 to 31 to ADDR
3. Set received CMND1 and CMND2 to RESP1 and RESP2
4. Set F value of the iris to DATA1 (See below)
5. Set 0x00 to DATA2
6. Set the sum of ADDR to DATA2 in 8 bits to CKSM

■ F value of iris for DATA1

DATA1	説明（※FNo は、Wide 端でのF 値）
0x01	Reserved
0x02	Reserved
0x03	Reserved
0x04	Reserved
0x05	Reserved
0x06	Reserved
0x07	F8
0x08	F9
0x09	F10
0x0A	F11
0x0B	F13
0x0C	F14
0x0D	F16
0x0E	F18
0x0F	F20
0x10	F22
0x11	F25
0x12	F29
0x13	F32

5.3.16 <Reserved>

5.3.17 Query Protocol Version

Command to get the supported Pelco Protocol Version

■ Send command

Byte	1	2	3	4	5	6	7
	SYNC	ADDR	CMND1	CMND2	DATA1	DATA2	CKSM
	0xFF	—	0x00	0xA1	0x00	0x00	—

1. Always set 0xFF to SYNC
2. Set address 1 to 31 to ADDR
3. Set 0x00 to DATA1 and DATA2
4. Set the sum of ADDR to DATA2 in 8 bits to CKSM

■ Receive command

Byte	1	2	3	4	5	6	7
	SYNC	ADDR	RESP1	RESP2	DATA1	DATA2	CKSM
	0xFF	—	0x00	0xA1	—	—	—

1. Always set 0xFF to SYNC
2. Set address 1 to 31 to ADDR
3. Set the received command to RESP1 and RESP2
4. Set major version to DATA1 and minor version to DATA2 (Ex. Version 1.10 = DATA1: 0x01, DATA2: 0x10, Version2.0A = DATA1: 0x02, DATA2: 0x0A)
5. Set the sum of ADDR to DATA2 in 8 bits to CKSM

5.3.18 <Reserved>

5.3.19 <Reserved>

5.3.20 <Reserved>

5.3.21 <Reserved>

5.3.22 <Reserved>

5.3.23 Query Manual Setting (Query Manual Setting Response)

Command to get various setting status

■ Send command

Byte	1	2	3	4	5	6	7
	SYNC	ADDR	CMND1	CMND2	DATA1	DATA2	CKSM
	0xFF	—	0x00	0xAD	—	0x00	—

1. Always set 0xFF to SYNC
2. Set address 1 to 31 to ADDR
3. Set the query target CMND2 to DATA1 (the CMND2 values, see below)
4. Set 0x00 to DATA2
5. Set the sum of ADDR to DATA2 in 8 bits to CKSM

■ Receive command

Byte	1	2	3	4	5	6	7
	SYNC	ADDR	RESP1	RESP2	DATA1	DATA2	CKSM
	0xFF	—	0x00	0xAF	—	—	—

1. Always set 0xFF to SYNC
2. Set address 1 to 31 to ADDR
3. Set 0x00 to RESP1

4. Set 0xAF to RESP2
5. Set requested value to DATA1 and DATA2 (See below for the value).
6. Set the sum of ADDR to DATA2 in 8 bits to CKSM

Function	CMND2 set by send command	DATA1 *returned* to receiving command	DATA2 *returned* to receiving command	Description
Query Zoom Speed	0x25	0x00	ZOOM_SPEED	*Returns* the zoom speed.
Query Focus Speed	0x27	0x00	FOCUS SPEED	*Returns* the focus speed.
Query Auto Focus	0x2B	0x00	AUTO F_CTL	AF On / Off / Quick AF
Query Auto Iris	0x2D	0x00	AUTO I_CTL	Auto iris On / Off
Query AGC	0x2F	0x00	AGC_CTL	AGC standard/off/Hyper
Query Backlight	0x31	0x00	BLC_CTL	Backlight compensation On / Off
Query Zoom Position	0x4F	ZOOM MSB	ZOOM LSB	*Returns* the zoom position.
Query Baud Rate	0x67	0x00	SET B_RARE	Set Remote baud rate.
Query Focus Position	0x8F	FOCUS MSB	FOCUS LSB	*Returns* the focus position.
Query Manual Iris	0x91	0x00	MANU_FNO	F value of iris
Query Shutter Limit on Auto	0x93	0x00	A_SHUT_LIM	*Returns* the minimum shutter speed for autoexposure.
Query Manual Shutter Speed	0x95	0x00	MANU_SHUT	*Returns* the shutter speed.
Query Manual ISO	0x99	0x00	MANU_ISO	*Returns* the ISO sensitivity.
	Others			Invalid

5.4 Original Command1 (Original commands of this specification: No.1: Photo Setting)

Original commands extended by FUJIFILM

The calculation method of CKSM is omitted in this chapter. That of [Chapter 3 Pelco-D outline] is adopted.

(0) Send command :

Set the sum of ADDR to DATA2 in 8bit to CKSM

(1) Receive command (General Response):

Set the sum of the received CKSM and ALARMS in 8bit in CKSM

(2) Receive command (Extended Response):

Set the sum of ADDR to DATA2 in 8bit to CKSM

(3) Receive command (Query Response):

Set the sum of ADDR to DATA15 in 8bit to CKSM **(Original specification by FUJIFILM)**

(4) Receive command : (Original specification by FUJIFILM)

Set the sum of ADDR to DATA2 in 8bit to CKSM

5.4.1 <Reserved>

5.4.2 Set AF Sensitivity

Command to set sensitivity at AF

■ Send command

Byte	1	2	3	4	5	6	7
	SYNC	ADDR	CMND1	CMND2	DATA1	DATA2	CKSM
	0xFF	—	0xF0	0x05	0x00	SENS GAIN	—

1. Set 0x00 to DATA1
2. Set 1 to 3 as SENS GAIN to DATA2

■ Argument of SENS GAIN

DATA2	Sensitivity
0x01	Low
0x02	Middle
0x03	High
Others	Low

■ Receive command

Byte	1	2	3	4
	SYNC	ADDR	ALARMS	CKSM
	0xFF	—	0x00	—

5.4.3 One-push AF

Command to execute One-push AF (Valid when Auto focus is Off)

■ Send command

Byte	1	2	3	4	5	6	7
	SYNC	ADDR	CMND1	CMND2	DATA1	DATA2	CKSM
	0xFF	—	0xF0	0x07	0x00	ONE_AF	—

1. Set 0x00 to DATA1
2. Set ONE_AF to DATA2

■ Argument of ONE_AF

DATA2	Operation
0x00	Execute One-push AF
Others	Invalid

■ Receive command

Byte	1	2	3	4
	SYNC	ADDR	ALARMS	CKSM
	0xFF	—	0x00	—

5.4.4 <Reserved>

5.4.5 <Reserved>

5.4.6 <Reserved>

5.4.7 <Reserved>

5.4.8 Set Infrared WaveLength

Command to set Infrared wavelength

■ Send command

Byte	1	2	3	4	5	6	7
	SYNC	ADDR	CMND1	CMND2	DATA1	DATA2	CKSM
	0xFF	—	0xF0	0x11	0x00	IWL SET	—

1. Set 0x00 to DATA1
2. Set 1 to 4 as IWL SET to DATA2

■ Argument of IWL SET

DATA2	Description
0x00	Visible light
0x01	950 nm
0x02	940 nm
0x03	850 nm
0x04	808 nm
Others	Visible light

■ Receive command

Byte	1	2	3	4
	SYNC	ADDR	ALARMS	CKSM
	0xFF	—	0x00	—

5.4.9 Set OIS Mode

Command to set ON / OFF of OIS and EIS

■ Send command

Byte	1	2	3	4	5	6	7
	SYNC	ADDR	CMND1	CMND2	DATA1	DATA2	CKSM
	0xFF	—	0xF0	0x13	0x00	OIS MODE	—

1. Set 0x00 to DATA1
2. Set 0 to 3 as OIS MODE to DATA2

■ Argument of OIS MODE

DATA2	Setting
0x01	AUTO(default)
0x02	Only OIS ON
0x03	Only EIS ON
0x04	Off
Others	Off

■ Receive command

Byte	1	2	3	4
	SYNC	ADDR	ALARMS	CKSM
	0xFF	—	0x00	—

5.4.10 <Reserved>

5.4.11 Set Photo Mode Preset

Command to set Photo mode preset

■ Send command

Byte	1	2	3	4	5	6	7
	SYNC	ADDR	CMND1	CMND2	DATA1	DATA2	CKSM
	0xFF	—	0xF0	0x17	0x00	PHOTO_PRST	—

1. Set 0x00 to DATA1
2. Set 1 or 2 as PHOT_PRST to DATA2

■ Argument of PHOTO_PRST

DATA2	Description
0x01	Surveillance (Focus on resolution)
0x02	Movie (General image quality)
Others	Surveillance

■ Receive command

Byte	1	2	3	4
	SYNC	ADDR	ALARMS	CKSM
	0xFF	—	0x00	—

5.4.12 Set DayNight Control by External

Command to switch Day / Night by DayNight trigger signal forcibly

■ Send command

Byte	1	2	3	4	5	6	7
	SYNC	ADDR	CMND1	CMND2	DATA1	DATA2	CKSM
	0xFF	—	0xF0	0x19	0x00	EX_TGER	—

1. Set 0x00 to DATA1
2. Set 1 or 2 as EX_TGER to DATA2

■ Argument of EX_TGER

DATA2	Description
0x01	On (DayNight trigger: valid) VLC filter
0x02	On (DayNight trigger : valid) CLEAR filter (Raw glass)
0x03	Off (DayNight trigger : invalid)
0x04	On(DayNight trigger : valid) 4th filter
Others	Off (DayNight trigger : invalid)

■ Receive command

Byte	1	2	3	4
	SYNC	ADDR	ALARMS	CKSM
	0xFF	—	0x00	—

5.4.13 <Reserved>

5.4.14 Query Photo Setting (Query Photo Setting Response)

Command to get the camera setting

■ Send command

Byte	1	2	3	4	5	6	7
	SYNC	ADDR	CMND1	CMND2	DATA1	DATA2	CKSM
	0xFF	—	0xF0	0x1D	—	0x00	—

1. Set CMND2 of question target to DATA1 (See below for the contents of CMND2)
2. Set 0x00 to DATA2

■ Receive command

Byte	1	2	3	4	5	6	7
	SYNC	ADDR	RESP1	RESP2	DATA1	DATA2	CKSM
	0xFF	—	0xF0	0x1F	—	—	—

1. Set 0xF0 to RESP1
2. Set 0x1F to RESP2
3. Set the value according to the request to DATA1 and DATA2 (See below for the response)

Function	CMND2 set by Send command	DATA1 *returned* to receiving command	DATA2 *returned* to receiving command	Description
Query AF Sensitivity	0x05	0x00	1–3	*Returns* the ISO sensitivity for autofocus.
Query One-push AF	0x07	0x00	AF_STATUS	AF status when One-Push AF 0x00: Finished 0x01 In process 0xFF: Abnormally
Query Infrared WaveLength	0x11	0x00	0–6	*Returns* the IR filter.
Query OIS Mode	0x13	0x00	0–3	*Returns* OIS status (on/off).
Query Photo Mode Preset	0x17	0x00	1–2	*Returns* the shooting mode preset.
Query DayNight Controll by External	0x19	0x00	1–3	Day / Night swatch by DayNight trigger
	Others			Invalid

5. 5 Original Command2 ((Original commands of this specification: No.2: Image Quality Parameter)

An extended command unique to this specification.

The calculation method of CKSM is omitted in this chapter. That of [Chapter 3 Pelco-D outline] is adopted.

(0) Send command :

Set the sum of ADDR to DATA2 in 8bit to CKSM

(1) Receive command (General Response):

Set the sum of the received CKSM and ALARMS in 8bit in CKSM

(2) Receive command (Extended Response):

Set the sum of ADDR to DATA2 in 8bit to CKSM

(3) Receive command (Query Response):

Set the sum of ADDR to DATA15 in 8bit to CKSM **(Original specification by FUJIFILM)**

(4) Receive command : (Original specification by FUJIFILM)

Set the sum of ADDR to DATA2 in 8bit to CKSM

5.5.1 <Reserved>

5.5.2 Set WideDynamicRange

Command to set the dynamic range

■ Send command

Byte	1	2	3	4	5	6	7
	SYNC	ADDR	CMND1	CMND2	DATA1	DATA2	CKSM
	0xFF	—	0xF0	0x23	0x00	D_RANGE	—

1. Set 0x00 to DATA1
2. Set D_RANGE to DATA2

■ Argument of D_RANGE

DATA2	Description
0x01	Off
0x02	1
0x03	2
Other	Off

■ Receive command

Byte	1	2	3	4
	SYNC	ADDR	ALARMS	CKSM
	0xFF	—	0x00	—

5.5.3 <Reserved>

5.5.4 Set DeHeatHaze Mode

Command to change De-heat haze mode

■ Send command

Byte	1	2	3	4	5	6	7
	SYNC	ADDR	CMND1	CMND2	DATA1	DATA2	CKSM
	0xFF	—	0xF0	0x27	0x00	DE_HEAT_MODE	—

1. Set 0x00 to DATA1
2. Set DE_HEAT_MOD to DATA2

■ Argument of DE_HEAT_MODE

DATA2	Description
0x00	Off
0x01	1
0x02	2
0x03	3
Others	Off

■ Receive command

Byte	1	2	3	4
	SYNC	ADDR	ALARMS	CKSM
	0xFF	—	0x00	—

5.5.5 Set Defogging Mode

Command to change De-fogging mode

■ Send command

Byte	1	2	3	4	5	6	7
	SYNC	ADDR	CMND1	CMND2	DATA1	DATA2	CKSM
	0xFF	—	0xF0	0x29	0x00	DE_FOG_MODE	—

1. Set 0x00 to DATA1
2. Set DE_FOG_MODE to DATA2

■ Argument of DE_FOG

DATA2	Description
0x00	Off
0x01	1
0x02	2
0x03	3
Others	Off

■ Receive command

Byte	1	2	3	4
	SYNC	ADDR	ALARMS	CKSM
	0xFF	—	0x00	—

5.5.6 <Reserved>

5.5.7 <Reserved>

5.5.8 <Reserved>

5.5.9 <Reserved>

5.5.10 Set ColorTemperature on WhiteBalance

Command to set the color temperature on the white balance

This command becomes effective when ColorTemperature (0x06) is set to DATA2 by Set Select WhiteBalance.

■ Send command

Byte	1	2	3	4	5	6	7
	SYNC	ADDR	CMND1	CMND2	DATA1	DATA2	CKSM
	0xFF	—	0xF0	0x33	0x00	C_WB_TEMP	—

1. Set 0x00 to DATA1
2. Set C_WB_TMP to DATA2

■ Argument of C_WB_TMP

DATA	Description
0x01	3000K
0x02	5000K
0x03	9000K
Others	5000K

■ Receive command

Byte	1	2	3	4
	SYNC	ADDR	ALARMS	CKSM
	0xFF	—	0x00	—

5.5.11 Set Select WhiteBalance

Command to set the white balance

■ Send command

Byte	1	2	3	4	5	6	7
	SYNC	ADDR	CMND1	CMND2	DATA1	DATA2	CKSM
	0xFF	—	0xF0	0x35	0x00	WB_SEL	—

1. Set 0x00 to DATA1
2. Set WB_SEL to DATA2

■ Argument of WB_SEL

DATA2	Description
0x01	Auto
0x02	Custom1 (Read preset, which can be set only by SDI menu)
0x03	Custom2 (Read preset, which can be set only by SDI menu)
0x04	Day
0x05	Cloud
0x06	ColorTemperature (Set the color temperature by Set ColorTemperature on WhiteBalance)
0x07	Auto (white priority)
Others	Auto

■ Receive command

Byte	1	2	3	4
	SYNC	ADDR	ALARMS	CKSM
	0xFF	—	0x00	—

5.5.12 Set Digital Zoom

Command to switch the digital zoom

■ Send command

Byte	1	2	3	4	5	6	7
	SYNC	ADDR	CMND1	CMND2	DATA1	DATA2	CKSM
	0xFF	—	0xF0	0x37	0x00	D_ZOOM	—

1. Set 0x00 to DATA1
2. Set D_ZOOM to DATA2

■ Argument of D_ZOOM

DATA2	Digital zoom
0x00	Off
0x01	On: Conventional Digital Zoom (Crop optical tele end)
0x02	Crop: Cropped at any position from wide end to tele end. Set magnification with Set Digital Zoom Ex.
Others	Off

■ Receive mode

Byte	1	2	3	4
	SYNC	ADDR	ALARMS	CKSM
	0xFF	—	0x00	—

5.5.13 Set NR Level

Command to set the noise reduction level

■ Send command

Byte	1	2	3	4	5	6	7
	SYNC	ADDR	CMND1	CMND2	DATA1	DATA2	CKSM
	0xFF	—	0xF0	0x39	0x00	NR_LEV	—

1. Set 0x00 to DATA1
2. Set NR_LEV to DATA2

■ Argument of NR_LEV

DATA2	Level
0x01	1: Weak
0x02	2: Middle
0x03	3: Strong
Others	2: Middle

■ Receive command

Byte	1	2	3	4
	SYNC	ADDR	ALARMS	CKSM
	0xFF	—	0x00	—

5.5.14 <Reserved>

5.5.15 Query ImageQuality Setting (Query ImageQuality Setting Response)

Command to get the image quality setting

■ Send command

Byte	1	2	3	4	5	6	7
	SYNC	ADDR	CMND1	CMND2	DATA1	DATA2	CKSM
	0xFF	—	0xF0	0x3D	—	0x00	—

1. Set CMND2 of question target to DATA1 (See below for the content of CMND2)
2. Set 0x00 to DATA2

■ Receive command

Byte	1	2	3	4	5	6	7
	SYNC	ADDR	RESP1	RESP2	DATA1	DATA2	CKSM
	0xFF	—	0xF0	0x3F	—	—	—

1. Set 0xF0 to RESP1
2. Set 0x3f to RESP2
3. Set values according to the requested content in DATA1 and DATA2 (see below for the response content)

Function	CMND2 set by send command	DATA1 *returned* to receiving command	DATA2 *returned* to receiving command	Description
Query Wide DynamicRange	0x23	0x00	1–3	*Returns* the dynamic range.
Query DeHeatHaze Mode	0x27	0x00	0–5	*Returns* the heat-haze reduction setting.
Query Defogging Mode	0x29	0x00	0–5	*Returns* the fog reduction setting.
Query ColorTemperature on whiteBalance	0x33	0x00	C_WB_TEMP	*Returns* the color temperature.
Query Select WhiteBalance	0x35	0x00	1–6	*Returns* white balance.
Query Digital Zoom	0x37	0x00	0–2	*Returns* digital zoom.
Query NR Level	0x39	0x00	1–3	*Returns* noise reduction.
	Others			Invalid

5.6 Original Command2 (Original commands of this specification: No.2: ImageQuality Parameter)

Original commands extended by FUJIFILM

The calculation method of CKSM is omitted in this chapter. That of [Chapter 3 Pelco-D outline] is adopted.

(0) Send command :

Set the sum of ADDR to DATA2 in 8bit to CKSM

(1) Receive command (General Response):

Set the sum of the received CKSM and ALARMS in 8bit in CKSM

(2) Receive command (Extended Response):

Set the sum of ADDR to DATA2 in 8bit to CKSM

(3) Receive command (Query Response):

Set the sum of ADDR to DATA15 in 8bit to CKSM **(Original specification by FUJIFILM)**

(4) Receive command : (Original specification by FUJIFILM)

Set the sum of ADDR to DATA2 in 8bit to CKSM

5.6.1 <Reserved>

5.6.2 Set DayTime Display

Command to set data and time

■ Send command

Byte	1	2	3	4	5	6	7
	SYNC	ADDR	CMND1	CMND2	DATA1	DATA2	CKSM
	0xFF	—	0xF0	0x43	0x00	TIME_DISP SW	—

1. Set 0x00 to DATA1
2. Set TIME_DISP SW to DATA2

■ Argument of TIME_DISP SW

DATA2	SW
0x00	Off
0x01	On
Others	Off

■ Receive command

Byte	1	2	3	4
	SYNC	ADDR	ALARMS	CKSM
	0xFF	—	0x00	—

5.6.3 Set DisplayPosition of DayTime

Command to set the display position of DateTime

■ Send command

Byte	1	2	3	4	5	6	7
	SYNC	ADDR	CMND1	CMND2	DATA1	DATA2	CKSM
	0xFF	—	0xF0	0x45	0x00	TIME_DISP POS	—

1. Set 0x00 to DATA1
2. Set TIME_DISP POS to DATA2

■ Argument of TIME_DISP POS

DATA2	Position
0x01	Upper right
0x02	Lower right
0x03	Upper left
0x04	Lower left
Others	Upper right

■ Receive command

Byte	1	2	3	4
	SYNC	ADDR	ALARMS	CKSM
	0xFF	—	0x00	—

5.6.4 Set Title Display

Command to display the title

* The title can be set by SDI menu. See the operation manual.

■ Send command

Byte	1	2	3	4	5	6	7
	SYNC	ADDR	CMND1	CMND2	DATA1	DATA2	CKSM
	0xFF	—	0xF0	0x47	0x00	TITLE_DISP SW	—

1. Set 0x00 to DATA1
2. Set TITLE_DISP SW to DATA2

■ Argument of TITLE_DISP SW

DATA2	Display
0x00	Off
0x01	On
Other	Off

■ Receive command

Byte	1	2	3	4
	SYNC	ADDR	ALARMS	CKSM
	0xFF	—	0x00	—

5.6.5 <Reserved>

5.6.6 Set DisplayPosition of Title

Command to set the position of the title display

■ Send command

Byte	1	2	3	4	5	6	7
	SYNC	ADDR	CMND1	CMND2	DATA1	DATA2	CKSM
	0xFF	—	0xF0	0x4B	0x00	TITLE_DISP POS	—

1. Set 0x00 to DATA1
2. Set TITLE_DISP POS to DATA2

■ Argument of TITLE_DISP POS

DATA2	Position
0x01	Upper right
0x02	Lower right
0x03	Upper left
0x04	Lower left
Others	Upper right

■ Receive command

Byte	1	2	3	4
	SYNC	ADDR	ALARMS	CKSM
	0xFF	—	0x00	—

5.6.7 Set ID Display

Command to display ID

* The ID can be set by SDI menu. See the operation manual.

■ Send command

Byte	1	2	3	4	5	6	7
	SYNC	ADDR	CMND1	CMND2	DATA1	DATA2	CKSM
	0xFF	—	0xF0	0x4D	0x00	DISP_ID SW	—

1. Set 0x00 to DATA1
2. Set DISP_ID SW to DATA2

■ Argument of DISP_ID SW

DATA2	Display
0x00	Off
0x01	On
Others	Off

■ Receive command

Byte	1	2	3	4
	SYNC	ADDR	ALARMS	CKSM
	0xFF	—	0x00	—

5.6.8 Set DisplayPosition of ID

Command to set the display position of ID

■ Send command

Byte	1	2	3	4	5	6	7
	SYNC	ADDR	CMND1	CMND2	DATA1	DATA2	CKSM
	0xFF	—	0xF0	0x4F	0x00	ID_DISP POS	—

1. Set 0x00 to DATA1
2. Set ID_DISP POS to DATA2

■ Argument of ID_DISP POS

DATA2	Position
0x01	Upper right
0x02	Lower right
0x03	Upper center
0x04	Lower center
0x05	Upper left
0x06	Lower left
Others	Upper right

■ Receive command

Byte	1	2	3	4
	SYNC	ADDR	ALARMS	CKSM
	0xFF	—	0x00	—

5.6.9 Set Center Position Display

Command to display the mark in the middle

■ Send command

Byte	1	2	3	4	5	6	7
	SYNC	ADDR	CMND1	CMND2	DATA1	DATA2	CKSM
	0xFF	—	0xF0	0x51	0x00	DISP_C_POS SW	—

1. Set 0x00 to DATA1
2. Set DISP_C_POS SW to DATA2

■ Argument of DISP_C_POS SW

DATA2	Display
0x00	Off (Default)
0x01	On
Others	Off

* Display is OFF after turn on (does not hold the previous setting)

■ Receive command

Byte	1	2	3	4
	SYNC	ADDR	ALARMS	CKSM
	0xFF	—	0x00	—

5.6.10 <Reserved>

5.6.11 SetAntialiasing

Command to control the anti-aliasing process of OSD on/off

■Send command

Byte	1	2	3	4	5	6	7
	SYNC	ADDR	CMND1	CMND2	DATA1	DATA2	CKSM
	0xFF	—	0xF0	0x55	0x00	ANTIALIASING SW	—

1. Set 0x00 to DATA1
2. Set ANNTIALIASING SW to DATA2

■Argument of ANTIALIASING SW

DATA2	SW
0x00	Off
0x01	On (Default)
Other	On

■Receive command

Byte	1	2	3	4
	SYNC	ADDR	ALARMS	CKSM
	0xFF	—	0x00	—

5.6.12 <Reserved>

5.6.13 <Reserved>

5.6.14 <Reserved>

5.6.15 Query Display Setting (Query Display Setting Response)

Command to get the display setting

■ Send command

Byte	1	2	3	4	5	6	7
	SYNC	ADDR	CMND1	CMND2	DATA1	DATA2	CKSM
	0xFF	—	0xF0	0x5D	—	0x00	—

1. Set the query target CMND2 to DATA1 (the CMND2 values, see below)
2. Set 0x00 to DATA2

■ Receive command

Byte	1	2	3	4	5	6	7
	SYNC	ADDR	RESP1	RESP2	DATA1	DATA2	CKSM
	0xFF	—	0xF0	0x5F	—	—	—

1. Set 0xF0 to RESP1
2. Set 0x5F to RESP2
3. Set requested value to DATA1 and DATA2 (the requested values, see below)

Function	CMND2 set by send command	DATA1 *returned* to receiving command	DATA2 *returned* to receiving command	Description
Query DayTime Display	0x43	0x00	0–1	*Returns* the date and time.
Query DisplayPosition of DayTime	0x45	0x00	1–4	*Returns* the date and time display position.
Query Title Display	0x47	0x00	0–1	*Returns* title display status.
Query Display Position of Title	0x4B	0x00	1–4	*Returns* the title display position.
Query ID Display	0x4D	0x00	0–1	*Returns* ID display status.
Query DisplayPosition of ID	0x4F	0x00	1–6	*Returns* the ID display position.
Query Center Position Display	0x51	0x00	0–1	*Returns* the display status of the center reticle.
Query Display Zoom bar & AF Frame	0x53	0x00	0–1	Display of the zoom bar and AF fram ON (Display): 1 OFF (No display): 0 (Display ON/OFF setting is doen be SetBack MCD 0xF0)
Query Antialiasing	0x55	0x00	0–1	Anti-alias status for the OSD ON: 1 OFF: 0
	Others			Invalid

5.7 Original Command 4 (Original commands of this specification: No...4: Operation Setting)

Original commands extended by FUJIFILM

The calculation method of CKSM is omitted in this chapter. That of [Chapter 3 Pelco-D outline] is adopted.

(0) Send command :

Set the sum of ADDR to DATA2 in 8bit to CKSM

(1) Receive command (General Response):

Set the sum of the received CKSM and ALARMS in 8bit in CKSM

(2) Receive command (Extended Response):

Set the sum of ADDR to DATA2 in 8bit to CKSM

(3) Receive command (Query Response):

Set the sum of ADDR to DATA15 in 8bit to CKSM **(Original specification by FUJIFILM)**

(4) Receive command : (Original specification by FUJIFILM)

Set the sum of ADDR to DATA2 in 8bit to CKSM

5.7.1 Set Display Mode of time

Command to switch the time display mode (24h ⇔ 12h)

■ Send command

Byte	1	2	3	4	5	6	7
	SYNC	ADDR	CMND1	CMND2	DATA1	DATA2	CKSM
	0xFF	—	0xF0	0x61	0x00	HOUR12_24 SEL	—

1. Set 0x00 to DATA1
2. Set HOUR12_24 SEL to DATA2

■ Argument of HOUR12_24 SEL

DATA2	Display mode
0x01	24h
0x02	12h
Others	24h

■ Receive command

Byte	1	2	3	4
	SYNC	ADDR	ALARMS	CKSM
	0xFF	—	*0x00*	—

5.7.2 Set DisplayMode of YMD

Command to switch the YMD display mode

■ Send command

Byte	1	2	3	4	5	6	7
	SYNC	ADDR	CMND1	CMND2	DATA1	DATA2	CKSM
	0xFF	—	0xF0	0x63	0x00	YMD SEL	—

1. Set 0x00 to DATA1
2. Set YMD SEL to DATA2

■ Argument of YMD SEL

DATA2	Display mode
0x01	Y-M-D
0x02	M-D-Y
0x03	D-M-Y
0x04	Y/M/D
0x05	M/D/Y
0x06	D/M/Y
Others	Y-M-D

■ Receive command

Byte	1	2	3	4
	SYNC	ADDR	ALARMS	CKSM
	0xFF	—	0x00	—

5.7.3 <Reserved>

5.7.4 Set Video Mode

Command to switch the video mode (NTSC⇔PAL)

■ Send command

Byte	1	2	3	4	5	6	7
	SYNC	ADDR	CMND1	CMND2	DATA1	DATA2	CKSM
	0xFF	—	0xF0	0x67	0x00	VIDEO MODE	—

1. Set 0x00 to DATA1
2. Set VIDEO MODE to DATA2

■ VUDEO MODE 引数

DATA2	Video mode
0x01	NTSC
0x02	PAL
Others	NTSC

■ Receive command

Byte	1	2	3	4
	SYNC	ADDR	ALARMS	CKSM
	0xFF	—	0x00	—

5.7.5 Set HD Format

Command to switch the image size of HD and the frame rate

■ Send command

Byte	1	2	3	4	5	6	7
	SYNC	ADDR	CMND1	CMND2	DATA1	DATA2	CKSM
	0xFF	—	0xF0	0x69	0x00	HD_FORMAT SW	—

1. Set 0x00 to DATA1
2. Set HD_FORMAT SW to DATA2

■ Argument of HD_FORMAT SW

DATA2	Image size (Frame rate)
0x01	1080p (30p)
0x02	720p (60p)
0x03	480p (60p)
Others	1080p (30p)

■ Receive command

Byte	1	2	3	4
	SYNC	ADDR	ALARMS	CKSM
	0xFF	—	0x00	—

5.7.6 Set VideoDisplay Mode

Command to set the display mode of the video

■ Send command

Byte	1	2	3	4	5	6	7
	SYNC	ADDR	CMND1	CMND2	DATA1	DATA2	CKSM
	0xFF	—	0xF0	0x6B	0x00	VIDEO_D_MODE	—

1. Set 0x00 to DATA1
2. Set VIDEO_D_MODE to DATA2

■ Argument of VIDEO_D_MODE

DATA2	Display mode
0x01	side cut
0x02	letter box
0x03	squeeze
Others	side cut

■ Receive command

Byte	1	2	3	4
	SYNC	ADDR	ALARMS	CKSM
	0xFF	—	0x00	—

5.7.7 <Reserved>

5.7.8 Set RS485 ID

Command to set ID for RS485

■ Send command

Byte	1	2	3	4	5	6	7
	SYNC	ADDR	CMND1	CMND2	DATA1	DATA2	CKSM
	0xFF	—	0xF0	0x6F	0x00	RS485_ID	—

1. Set 0x00 to DATA1
2. Set RS485_ID to DATA2 in 16bit binary

■ Argument of RS485_ID

DATA2	Setting
1～31	RS485 ID(Default : 7)
Others	7

* Power OFF→ON sequence is required to reflect the settings

■ Receive command

Byte	1	2	3	4
	SYNC	ADDR	ALARMS	CKSM
	0xFF	—	0x00	—

5.7.9 <Reserved>

5.7.10 Set Termination for RS485

Command to switch the termination of RS485

■ Send command

Byte	1	2	3	4	5	6	7
	SYNC	ADDR	CMND1	CMND2	DATA1	DATA2	CKSM
	0xFF	—	0xF0	0x73	0x00	TEMINAT SW	—

1. Set 0x00 to DATA1
2. Set TEMINAT SW to DATA2

■ Argument of TEMINAT SW

DATA2	Switch
0x00	Off
0x01	On
Others	Off

■ Receive command

Byte	1	2	3	4
	SYNC	ADDR	ALARMS	CKSM
	0xFF	—	0x00	—

5.7.11 <Reserved>

5.7.12 Set RecordingMode on Scared

Command to set SD overwrite recording when card Full

■ Send command

Byte	1	2	3	4	5	6	7
	SYNC	ADDR	CMND1	CMND2	DATA1	DATA2	CKSM
	0xFF	—	0xF0	0x77	0x00	SD_RECORD SW	—

1. Set 0x00 to DATA1
2. Set SD_RECORD SW to DATA2

■ Argument of SD_RECORD SW

DATA2	Setting
0x01	Overwrite
0x02	Stop recording (There is on/off setting to display the remaining amount)
Others	Overwrite

■ Receive command

Byte	1	2	3	4
	SYNC	ADDR	ALARMS	CKSM
	0xFF	—	0x00	—

5.7.13 SetDisplay Scared Capacity Remaining

Command to set the display of remaining of SD card capacity

■ Send command

Byte	1	2	3	4	5	6	7
	SYNC	ADDR	CMND1	CMND2	DATA1	DATA2	CKSM
	0xFF	—	0xF0	0x79	0x00	DISP_CARD_SW	—

1. Set 0x00 to DATA1
2. Set DISP_CARD_SW to DATA2

■ Argument of DISP_CARD_SW

DATA2	Setting
0x01	Display remaining of SD Card capacity : ON
0x02	Display remaining of SD Card capacity : OFF (Even if it is OFF, the remaining time will be displayed when it reaches 30 minutes.)
Others	Display remaining of SD Card capacity : ON

■ Receive command

Byte	1	2	3	4
	SYNC	ADDR	ALARMS	CKSM
	0xFF	—	0x00	—

5.7.14 Format SDcard

Command to format SD card

■ Send command

Byte	1	2	3	4	5	6	7
	SYNC	ADDR	CMND1	CMND2	DATA1	DATA2	CKSM
	0xFF	—	0xF0	0x7B	0x00	SD_FORMAT	—

1. Set 0x00 to DATA1
2. Set SD_FORMAT to DATA2

■ Argument of SD_FORMAT

DATA2	Format
0x00	Format SD card
Others	Do nothing

■ Receive command

Byte	1	2	3	4
	SYNC	ADDR	ALARMS	CKSM
	0xFF	—	0x00	—

5.7.15 Download Firmware

Command used to update FW. SX1600 cannot update FW via RS485. Therefore, even if SX1600 are installed at a remote distance and controlled by RS485, FW update needs to use Ethernet I / F.

When this command is sent, the camera automatically reboots and starts up in the simple WebUI mode, and only the FW download operation via the Ethernet I / F is enabled. After the FW download is completed, reboot automatically again and restart in Pelco mode.

* Note: If this command is sent, it will not be possible to return via RS485, so be careful when sending the command.

■ Send command

Byte	1	2	3	4	5	6	7
	SYNC	ADDR	CMND1	CMND2	DATA1	DATA2	CKSM
	0xFF	—	0xF0	0x7D	0x00	FW_DL	—

1. Set 0x00 t0 DATA1
2. Set FW_DL to DATA2

■ Argument of FW_DL

DATA2	Action
0x01	Update FW
Others	Invalid

■ Receive command

Byte	1	2	3	4
	SYNC	ADDR	ALARMS	CKSM
	0xFF	—	0x00	—

5.7.16 Recode LogData on SDcard

Command to copy the log data on the memory to SD card

■ Send command

Byte	1	2	3	4	5	6	7
	SYNC	ADDR	CMND1	CMND2	DATA1	DATA2	CKSM
	0xFF	—	0xF0	0x7F	0x00	LOG_COPY_SD	—

1. Set 0x00 to DATA1
2. Set LOG_COPY_SD to DATA2

■ Argument of LOG_COPY_SD

DATA2	Action
0x00	Does not copy
0x01	Copy the log to SD card
Others	Does not copy

■ Receive command

Byte	1	2	3	4
	SYNC	ADDR	ALARMS	CKSM
	0xFF	—	0x00	—

5.7.17 Preset parameters

Command to reset parameters to factory default

* After initializing parameters other than IP settings, the camera sends a receive command and restarts automatically.

■ Send command

Byte	1	2	3	4	5	6	7
	SYNC	ADDR	CMND1	CMND2	DATA1	DATA2	CKSM
	0xFF	—	0xF0	0x81	0x00	PRESET	—

1. Set 0x00 to DATA1
2. Set PRESET to DATA2

■ Argument of PRESET

DATA2	Action
0x00	Reset parameters other than IP setting
Others	Invalid

■ Receive command

Byte	1	2	3	4
	SYNC	ADDR	ALARMS	CKSM
	0xFF	—	0x00	—

5.7.18 Reboot

Command to reboot

■ Send command

Byte	1	2	3	4	5	6	7
	SYNC	ADDR	CMND1	CMND2	DATA1	DATA2	CKSM
	0xFF	—	0xF0	0x83	0x00	REBOOT	—

1. Set 0x00 to DATA1
2. Set REBOOT to DATA2

■ Argument of REBOOT

DATA2	Action
0x01	Reboot
Others	Invalid

■ Receive command

Byte	1	2	3	4
	SYNC	ADDR	ALARMS	CKSM
	0xFF	—	0x00	—

5.7.19 Set Language

Command to set the language

■ Send command

Byte	1	2	3	4	5	6	7
	SYNC	ADDR	CMND1	CMND2	DATA1	DATA2	CKSM
	0xFF	—	0xF0	0x85	0x00	LANGUAGE	—

1. Set 0x00 to DATA1
2. Set LANGUAGE to DATA2

■ Argument of LANGUAGE

DATA2	Language
0x00	English
0x01	French
0x02	Invalid
0x03	Japanese
Others	English

■ Receive command

Byte	1	2	3	4
	SYNC	ADDR	ALARMS	CKSM
	0xFF	—	0x00	—

5.7.20 <Reserved>

5.7.21 <Reserved>

5.7.22 <Reserved>

5.7.23 Query Operation Setting (Query Operation Setting Response)

Command to get the camera setting

■ Send command

Byte	1	2	3	4	5	6	7
	SYNC	ADDR	CMND1	CMND2	DATA1	DATA2	CKSM
	0xFF	—	0xF0	0x8D	—	0x00	—

1. Set the query target CMND2 to DATA1 (the CMND2 values, see below)
2. Set 0x00 to DATA2

■ Receive command

Byte	1	2	3	4	5	6	7
	SYNC	ADDR	RESP1	RESP2	DATA1	DATA2	CKSM
	0xFF	—	0xF0	0x8F	—	—	—

1. Set 0xF to RESP1
2. Set 0x8F to RESP2
3. Set requested value to DATA1 and DATA2 (the requested values, see below)

Function	CMND2 set by send command	DATA1 *returned* to receiving command	DATA2 *returned* to receiving command	Description
Query DisplayMode of time	0x61	0x00	1–2	Data/ Time display mode(24h⇔12h)
Query DisplayMode of YMD	0x63	0x00	1–6	YMD mode
Query Video Mode	0x67	0x00	1–2	Video Mode (NTSC⇔PAL)
Query HD Format	0x69	0x00	1–4	HD image size and its frame rate
Query VideoDisplay Mode	0x6B	0x00	1–3	*Returns* the video display mode.
Query RS485 ID	0x6F	0x00	0–255	*Returns* the RS485 ID.
Query Termination for RS485	0x73	0x00	0–1	Termination of RS485
Query RecordingMode on SDcard	0x77	0x00	1–2	Overwrite when SD card is full
Query Display SDcard Capacity Remaining	0x79	0x00	1–2	Display the remaining of SD card capacity
Query Format SDcard	0x7B	0x00	FOMAT_STATUS	Status of formatting SD card 0x00: Completed 0x01: In process 0xFF: Error
Query Record LogData on SDcard	0x7F	0x00	0–1	Copy the log data to SD card
Query Preset parameters	0x81	0x00	0	Reset parameters to factory default
Query Language	0x85	0x00	0–3	*Returns* the language setting.
Query SDcard Status	0x8B	0x00	SD_CARD_STATUS	Status of the SD card (Status of SD_CARD_STATUS is below)
	Others			Invalid

※ Status of SD_CARD_STATUS

SD_CARD_STATUS	Status
0x00	Normal
0x01	SD card error
0x02	Unformatted
0x03	Protected
0x04	File system error
0x05	Full
0x06	No card

◆ Status of formatable card
0x00:Normal
0x01:SD card error
0x02:Unformatted
0x04: File system error
0x05: Full
※ However, formatting may fail when status were 0x01 or 0x04

◆ Video recordable status
0x00:Normal

◆ Video playable status
0x00:Normal
0x03:Protected
0x05: Full

5.8 Original Command 5 (Original commands of this specification: No...5: SET KEY)

Original commands extended by FUJIFILM

The calculation method of CKSM is omitted in this chapter. That of [Chapter 3 Pelco-D outline] is adopted.

(0) Send command :

Set the sum of ADDR to DATA2 in 8bit to CKSM

(1) Receive command (General Response):

Set the sum of the received CKSM and ALARMS in 8bit in CKSM

(2) Receive command (Extended Response):

Set the sum of ADDR to DATA2 in 8bit to CKSM

(3) Receive command (Query Response):

Set the sum of ADDR to DATA15 in 8bit to CKSM **(Original specification by FUJIFILM)**

(4) Receive command : (Original specification by FUJIFILM)

Set the sum of ADDR to DATA2 in 8bit to CKSM

5.8.1 SetEncodeMode

Command to set the video encode format

■ Send command

Byte	1	2	3	4	5	6	7
	SYNC	ADDR	CMND1	CMND2	DATA1	DATA2	CKSM
	0xFF	—	0xF0	0x91	0x00	ENCODING	—

1. Set 0x00 to DATA1
2. Set ENCODING to DATA2

■ Argument of ENCODING

DATA2	Encode format
0x01	H.264,
0x02	MJPEG
0x03	MPEG4
Others	H.264

■ Receive command

Byte	1	2	3	4
	SYNC	ADDR	ALARMS	CKSM
	0xFF	—	0x00	—

5.8.2 Record LiveView on SDcard

Command to record the live view into SD card

■ Send command

Byte	1	2	3	4	5	6	7
	SYNC	ADDR	CMND1	CMND2	DATA1	DATA2	CKSM
	0xFF	—	0xF0	0x93	0x00	LV_RECORD	—

1. Set 0x00 to DATA1
2. Set LV_RECORD to DATA2

■ Argument of LV_RECORD

DATA2	Record
0x00	On
0x01	Off
Others	On

■ Receive command

Byte	1	2	3	4
	SYNC	ADDR	ALARMS	CKSM
	0xFF	—	0x00	—

5.8.3 Set 1st file of playing Movie

Command to play the first file

How to use:
First, read out the total number of movie in the SD card by Query Number of Movies on SDcard command (0xF0, 0xB1), and then set the target frame.

■ Send command

Byte	1	2	3	4	5	6	7
	SYNC	ADDR	CMND1	CMND2	DATA1	DATA2	CKSM
	0xFF	—	0xF0	0x95	F_NO MSB	F_NO LSB	—

1. Set F_NO MSB to DATA1
2. Set F_NO LSB to DATA2

* Set the file index number to playback to F_NO

■ Receive command

Byte	1	2	3	4
	SYNC	ADDR	ALARMS	CKSM
	0xFF	—	0x00	—

What is File index number:

The camera generates a table of file index numbers (F_NO) on the memory so that the latest file is 0x0001, only for the files recorded by the SX1600 at startup.
When the file is deleted, F_NO of the deleted file becomes an empty number until the file number table is updated next time the power is turned on.

5.8.4 Play Movie from SDcard

Command to set Play/Stop mode of the video file in the SD card

■ Send command

Byte	1	2	3	4	5	6	7
	SYNC	ADDR	CMND1	CMND2	DATA1	DATA2	CKSM
	0xFF	—	0xF0	0x97	0x00	PLAY_SET	—

1. Set 0x00 to DATA1
2. Set PLAY_SET to DATA2

■ Argument of PLAY_SET

DATA2	Mode
0x00	Stop (Playback standby state: Thumbnail or inclusion JPEG displayed)
0x01	One frame playback
0x02	Continuous playback (Play from the current position in order of recording time. After the last frame, play the oldest frame in the card.)
0x03	Pause (Display freeze)
0x04	Playback again
Others	Stop (Playback standby state: Thumbnail or inclusion JPEG displayed)

* Default is 0x00。When transitioning from the movie mode to the playback mode, it is always 0x00, and the thumbnail or included JPEG display of the latest time stamp is displayed for the frame.

■ Receive command

Byte	1	2	3	4
	SYNC	ADDR	ALARMS	CKSM
	0xFF	—	0x00	—

5.8.5 Delete Movie from SDcard

Command to set the target movie number to delete from SD card

How to use:
First, read out the total number of movie in the SD card by Query Number of Movies on SDcard command (0xF0, 0xB1), and then set the target frame.

■ Send command

Byte	1	2	3	4	5	6	7
	SYNC	ADDR	CMND1	CMND2	DATA1	DATA2	CKSM
	0xFF	—	0xF0	0x99	F_NO MSB	F_NO LSB	—

1. Set F_NO MSB to DATA1
2. Set F_NO LSB to DATA2

■ Argument of DISP_C_POS SW

DATA1 + DATA2	
File index number	Delete the movie of the file index number
0x0000	All delete

■ Receive command

Byte	1	2	3	4
	SYNC	ADDR	ALARMS	CKSM
	0xFF	—	0x00	—

5.8.6 Select Movie mode Play mode

Command to switch Movie mode/Playback mode

■ Send command

Byte	1	2	3	4	5	6	7
	SYNC	ADDR	CMND1	CMND2	DATA1	DATA2	CKSM
	0xFF	—	0xF0	0x9B	0x00	MODE_SW	—

1. Set 0x00 to DATA1
2. Set MODE_SW to DATA2

■ Argument of MODE_SW

DATA2	Mode
0x01	Movie mode (When playing back the movie, playback is interrupted and transit to Movie mode)
0x02	Play back mode (When recording a movie, issue this command after stopping movie by 5.8.2 Record LiveView on SDcard (0xF0, 0x93))
Others	Movie mode

* Default is 0x01

■ Receive command

Byte	1	2	3	4
	SYNC	ADDR	ALARMS	CKSM
	0xFF	—	0x00	—

5.8.7 <Reserved>

5.8.8 <Reserved>

5.8.9 <Reserved>

5.8.10 <Reserved>

5.8.11 <Reserved>

5.8.12 Set SDI ON MENU OK

Command to switch ON/OFF of SDI display and execute MENU OK command (* this command is available at Pelco Slave mode)

■ Send command

Byte	1	2	3	4	5	6	7
	SYNC	ADDR	CMND1	CMND2	DATA1	DATA2	CKSM
	0xFF	—	0xF0	0xA7	0x00	SDI_ON	—

1. Set 0x00 to DATA1
2. Set SDI_ON to DATA2

■ Argument of SDI_ON

DATA2	Mode
0x00	Off (SDI OFF and MENU OFF)
0x01	On (Execute instead of MENU OK key)
Others	Off (SDI OFF and MENU OFF)

■ Receive command

Byte	1	2	3	4
	SYNC	ADDR	ALARMS	CKSM
	0xFF	—	0x00	—

5.8.13 Set Direction

Command to move cursor (* this command is available at Pelco Slave mode)

■ Send command

Byte	1	2	3	4	5	6	7
	SYNC	ADDR	CMND1	CMND2	DATA1	DATA2	CKSM
	0xFF	—	0xF0	0xA9	0x00	CURSOR	—

1. Set 0x00 to DATA1
2. Set CURSOR to DATA2

■ CURSOR 引数

DATA2	Direction
0x01	Up
0x02	Down
0.03	Left
0x04	Right
Others	Invalid

■ Receive command

Byte	1	2	3	4
	SYNC	ADDR	ALARMS	CKSM
	0xFF	—	0x00	—

5.8.14 Set Back CMD

Command to execute MENU BACK (* this command is available at Pelco Slave mode)

■ Send command

Byte	1	2	3	4	5	6	7
	SYNC	ADDR	CMND1	CMND2	DATA1	DATA2	CKSM
	0xFF	—	0xF0	0xAB	0x00	M_BACK	—

1. Set 0x00 to DATA1
2. Set M_BACK to DATA2

■ Argument of M_BACK

DATA2	Action
0x00	Invalid
0x01	MENU BACK
Others	Invalid

■ Receive command

Byte	1	2	3	4
	SYNC	ADDR	ALARMS	CKSM
	0xFF	—	0x00	—

5.8.15 Query Key Setting (Query Key Setting Response)

Command to get the previous key setting

■ Send command

Byte	1	2	3	4	5	6	7
	SYNC	ADDR	CMND1	CMND2	DATA1	DATA2	CKSM
	0xFF	—	0xF0	0xAD	—	0x00	—

1. Set the query target CMND2 to DATA1 (the CMND2 values, see below)
2. Set 0x00 to DATA2

■ Receive command

Byte	1	2	3	4	5	6	7
	SYNC	ADDR	RESP1	RESP2	DATA1	DATA2	CKSM
	0xFF	—	0xF0	0xAF	—	—	—

1. Set 0xF0 to RESP1
2. Set 0xAF to RESP2
3. Set requested value to DATA1 and DATA2 (See below for the value).

Function	CMND2 set by send command	DATA1 *returned* to receiving command	DATA2 *returned* to receiving command	Description
Query EncodeMode	0x91	0x00	1–2	*Returns* the video encoding.
Query Record LiveView on SDcard	0x93	0x00	0–1	*Returns* live-feed-to-memory-card recording status. 0x00 On 0x01 Off
Query 1st file of playing Movie	0x95	number1	number2	Play the first file
Query Play Movie from SDcard	0x97	0x00	0–4	*Returns* the status of video playback from the memory card. 0x00 Stop 0x01 One frame playback 0x02 Continuous playback 0x03 Pause (Display freeze) 0x04 Playback again
Query Delete Movie from SDcard	0x99	number1	number2	*Returns* the number of the frame to be deleted from the memory card.
Query Select Movie mode Play mode	0x9B	0x00	1–2	*Returns* the video/playback mode toggle status.
Query SDI ON MENU OK	0xA7	0x00	0–1	*Returns* SDI display status (on/off).
Query Direction	0xA9	0x00	1–4	*Returns* cursor movement (0x00 when no cursor history).
Query Back CMD	0xAB	0x00	0–1	*Returns* MENU BACK status.
	Others			Invalid

5.9 Original Command 6 (Original commands of this specification : No. 6 : Query SDcard)

Original commands extended by FUJIFILM

The calculation method of CKSM is omitted in this chapter. That of [Chapter 3 Pelco-D outline] is adopted.

(0) Send command :

Set the sum of ADDR to DATA2 in 8bit to CKSM

(1) Receive command (General Response):

Set the sum of the received CKSM and ALARMS in 8bit in CKSM

(2) Receive command (Extended Response):

Set the sum of ADDR to DATA2 in 8bit to CKSM

(3) Receive command (Query Response):

Set the sum of ADDR to DATA15 in 8bit to CKSM **(Original specification by FUJIFILM)**

(4) Receive command : (Original specification by FUJIFILM)

Set the sum of ADDR to DATA2 in 8bit to CKSM

5.9.1 Query Number of Movies on SDcard (Query Number of Movies on SDcard Response)

Command to get the number of movie files in the SD card

■ Send command

Byte	1	2	3	4	5	6	7
	SYNC	ADDR	CMND1	CMND2	DATA1	DATA2	CKSM
	0xFF	—	0xF0	0xB1	0xB3	0x00	—

1. Set the query target CMND2 to DATA1 (0xB3)
2. Set 0x00 to DATA2

■ Receive command

Byte	1	2	3	4	5	6	7
	SYNC	ADDR	RESP1	RESP2	DATA1	DATA2	CKSM
	0xFF	—	0xF0	0xB3	NUMBER MSB	NUMBER LSB	—

1. Set 0xF0 to RESP1
2. Set 0xB3 to RESP2
3. Set NUMBER MSB to DATA1
4. Set NUMBER LSB to DATA2

5.9.2 Query Year of Movie on SDcard (Query Year of Movie on SDcard Response)

Command to get the recorded year of the movie file in the SD card

How to use:
First, read out the total number of movie in the SD card by Query Number of Movies on SDcard command (0xF0, 0xB1), and then set the target frame.

■ Send command

Byte	1	2	3	4	5	6	7
	SYNC	ADDR	CMND1	CMND2	DATA1	DATA2	CKSM
	0xFF	—	0xF0	0xB5	F_NO MSB	F_NO LSB	—

1. Set F_NO MSB to DATA1
2. Set F_NO LSB to DATA2

   * F_NO is the File Index number of the movie to playback

■ Receive command

Byte	1	2	3	4	5	6	7
	SYNC	ADDR	RESP1	RESP2	DATA1	DATA2	CKSM
	0xFF	—	0xF0	0xB7	F_YY MSB	F_YY LSB	—

1. Set 0xF0 to RESP1
2. Set 0xB7 to RESP2
3. Set F_YY MSB to DATA1
4. Set F_YY LSB to DATA2

   * F_YY is the recorded year represented by a 4-digit hexadecimal number (2 Bytes)

5.9.3 Query MonthDay of Movie on SDcard (Query MonthDay of Movie on SDcard Response)

Command to get the recorded date and month of the movie file in the SD card

How to use:

First, get the total number of the files by Query Number of Movies on SDcard(0xF0、0xB1) command, then set the target file

■ Send command

Byte	1	2	3	4	5	6	7
	SYNC	ADDR	CMND1	CMND2	DATA1	DATA2	CKSM
	0xFF	—	0xF0	0xB9	F_NO MSB	F_NO LSB	—

1. Set F_NO MSB to DATA1
2. Set F_NO LSB to DATA2

* F_NO is the File Index number of the movie to playback

■ Receive command

Byte	1	2	3	4	5	6	7
	SYNC	ADDR	RESP1	RESP2	DATA1	DATA2	CKSM
	0xFF	—	0xF0	0xBB	F_MM	F_DD	—

1. Set 0xF0 to RESP1
2. Set 0xB7 to RESP2
3. Set F_MM to DATA1
4. Set F_DD to DATA2

* F_MM and F_DD are the recorded month and date

5.9.4 Query HourMinute of Movie on SDcard (Query HourMinute of Movie on SDcard Response)

Command to get the recorded time of day (24h notation) of the movie file in the SD card

How to use:
First, read out the total number of movie in the SD card by Query Number of Movies on SDcard command (0xF0, 0xB1), and then set the target frame.

■ Send command

Byte	1	2	3	4	5	6	7
	SYNC	ADDR	CMND1	CMND2	DATA1	DATA2	CKSM
	0xFF	—	0xF0	0xBD	F_NO MSB	F_NO LSB	—

1. Set F_NO MSB to DATA1
2. Set F_NO LSB to DATA2

   * Fanons File Index number of the requested movie

■ Receive command

Byte	1	2	3	4	5	6	7
	SYNC	ADDR	RESP1	RESP2	DATA1	DATA2	CKSM
	0xFF	—	0xF0	0xBF	F_HH	F_MM	—

1. Set 0xF0 to RESP1
2. Set 0xB7 to RESP2 は 0xB7
3. Set F_HH(Hexadecimal) to DATA1
4. Set F_MM(Hexadecimal)to DATA2

   * F_HH and F_MM are the recorded time of day (hour and minutes in 24h notation)

5.10 Original Command7(In-House Custom Parameter No. 7: Query LogData)

An extended command unique to this specification.

The calculation method of CKSM is omitted in this chapter. That of [Chapter 3 Pelco-D outline] is adopted.

(0) Send command:

Set the sum of ADDR to DATA2 in 8bit to CKSM

(1) Receive command (General Response):

Set the sum of the received CKSM and ALARMS in 8bit in CKSM

(2) Receive command (Extended Response):

Set the sum of ADDR to DATA2 in 8bit to CKSM

(3) Receive command (Query Response):

Set the sum of ADDR to DATA15 in 8bit to CKSM **(Original specification by FUJIFILM)**

(4) Receive command : (Extended Response2) (Original specification by FUJIFILM)

Set the sum of ADDR to DATA2 in 8bit to CKSM

5.10.1 Query LogData (Query LogData Response)

Command to get the LogData of the camera.

■ Send command

Byte	1	2	3	4	5	6	7
	SYNC	ADDR	CMND1	CMND2	DATA1	DATA2	CKSM
	0xFF	—	0xF0	0xD1	0xD3	LOG_TYPE	—

1. Set the query target CMND2 to DATA1 (0xD3)
2. Set LOG_TYPE to DATA2

■ LOG_TYPE arguments

DATA2 set by send command	Purpose	DATA1,DATA2 (LOG_DAT) set by the receiving command
0x01	Zoom	Cumulative number of moving pulses
0x02	Focus	Cumulative number of moving pulses
0x03	PowerOnTime	Cumulative energization time
0x04	OIS	Cumulative drive time (The time OIS is set to ON)
0x05	Thermal	Recording cycle Recording period : 3 years *) Delete from old records Data is managed in units of year, month, date, and time. Temperature data is obtained from the lens.
0x06	Error	Error history of the recording target
Others	Zoom	Cumulative number of moving pulses

5.11 Original Command 8 (In-House Custom Parameter No. 8: ImageQuality Parameter Fine)

An extended command unique to this specification. The checksum (CKSM) calculation is omitted from this chapter, as we have adopted the method outlined for Pelco-D in Chapter 3. New commands have been added for fine control of image quality parameters.

(0) Command sent:

Set the CKSM to the 8-bit sum of ADDR through DATA2.

(1) Response (General Response):

Set the CKSM to the 8-bit sum of ALARMS and the value returned for CKSM.

(2) Response (Extended Response):

Set the CKSM to the 8-bit sum of ADDR through DATA2.

(3) Response (Query Response):

Set the CKSM to the 8-bit sum of ADDR through DATA15 (*in-house custom parameter*).

(4) Response (Extended Response 2, an in-house custom parameter):

Set the CKSM to the 8-bit sum of ADDR through DATA2.

5.11.1 <Reserved>

5.11.2 <Reserved>

5.11.3 <Reserved>

5.11.4 <Reserved>

5.11.5 <Reserved>

5.11.6 Set Brightness Level Fine

A command used to set brightness.

■ Send command

Byte	1	2	3	4	5	6	7
	SYNC	ADDR	CMND1	CMND2	DATA1	DATA2	CKSM
	0xFF	—	0xF0	0xEB	0x00	BRIGHT_LV	—

1. DATA1 is fixed at 0x00.
2. DATA2 sets BRIGHT_LV.

■ BRIGHT_LV arguments

DATA2	Description
0x01–0x64	1 – 100
Other	50

■ Receive command

Byte	1	2	3	4
	SYNC	ADDR	ALARMS	CKSM
	0xFF	—	0x00	—

5.11.7 Set Contrast Level Fine

A command used to set contrast.

■ Send command

Byte	1	2	3	4	5	6	7
	SYNC	ADDR	CMND1	CMND2	DATA1	DATA2	CKSM
	0xFF	—	0xF0	0xED	0x00	CONT_LV	—

1. DATA1 is fixed at 0x0.
2. DATA2 sets CONT_LV.

■ CONT_LV arguments

DATA2	Description
0x01-0x64	1 – 100
Other	50

■ Receive command

Byte	1	2	3	4
	SYNC	ADDR	ALARMS	CKSM
	0xFF	—	0x00	—

5.11.8 Set ColorSaturation Level Fine

A command used to set color saturation.

■ Send command

Byte	1	2	3	4	5	6	7
	SYNC	ADDR	CMND1	CMND2	DATA1	DATA2	CKSM
	0xFF	—	0xF0	0xEF	0x00	COLOR_ST_LV	—

1. DATA1 is fixed at 0x00.
2. DATA2 sets COLOR_ST_LV.

■ COLOR_ST_LV arguments

DATA2	Description
0x01-0x64	1 – 100
Other	50

■ Receive command

Byte	1	2	3	4
	SYNC	ADDR	ALARMS	CKSM
	0xFF	—	0x00	—

5.11.9 Set Sharpness Level Fine

A command used to set sharpness.

■ Send command

Byte	1	2	3	4	5	6	7
	SYNC	ADDR	CMND1	CMND2	DATA1	DATA2	CKSM
	0xFF	—	0xF0	0xF1	0x00	SHARP_LV	—

1. DATA1 is fixed at 0x00.
2. DATA2 sets SHARP_LV.

■ SHARP_LV arguments

DATA2	Description
0x01–0x64	1 – 100
Other	20 / 80 *

* Varies with the setting for 5.4.11, “Set Photo Mode Preset” (video/surveillance).

■ Receive command

Byte	1	2	3	4
	SYNC	ADDR	ALARMS	CKSM
	0xFF	—	0x00	—

5.11.10 <Reserved>

5.11.11 Set WhiteBalance Shift Red Fine

A command used to set the white-balance shift R component for the current white balance mode.

■ Send command

Byte	1	2	3	4	5	6	7
	SYNC	ADDR	CMND1	CMND2	DATA1	DATA2	CKSM
	0xFF	—	0xF0	0xF5	0x00	WB_SHIFT_R	—

1. DATA1 is fixed at 0x00.
2. DATA2 sets C_WB_TMP.

■ WB_SHIFT_R arguments

DATA2	Description
0x77-0x89	0x77(-9) – 0x80(0) – 0x89(+9)
Other	0x80

■ Receive command

Byte	1	2	3	4
	SYNC	ADDR	ALARMS	CKSM
	0xFF	—	0x00	—

5.11.12 Set WhiteBalance Shift Blue Fine

A command used to set the white-balance shift B component for the current white balance mode.

■ Send command

Byte	1	2	3	4	5	6	7
	SYNC	ADDR	CMND1	CMND2	DATA1	DATA2	CKSM
	0xFF	—	0xF0	0xF7	0x00	WB_SHIFT_B	—

1. DATA1 is the CMND2 query target (0xD3).
2. DATA2 sets WB_SEL.

■ WB_SHIFT_B arguments

DATA2	Description
0x77–0x89	0x77 (−9) – 0x80 (0) – 0x89 (+9)
Other	0x80

■ Receive command

Byte	1	2	3	4
	SYNC	ADDR	ALARMS	CKSM
	0xFF	—	0x00	—

5.11.13 <Reserved>

5.11.14 <Reserved>

5.11.15 Query ImageQuality Setting Fine (Query ImageQuality Setting Response Fine)

A command that returns image quality parameters.

■ Send command

Byte	1	2	3	4	5	6	7
	SYNC	ADDR	CMND1	CMND2	DATA1	DATA2	CKSM
	0xFF	—	0xF0	0xFD	—	0x00	—

1. DATA1 is the CMND2 query target (see the table below).
2. DATA2 is fixed at 0x00.

■ Receive command (Extended Response 2)

Byte	1	2	3	4	5	6	7
	SYNC	ADDR	RESP1	RESP2	DATA1	DATA2	CKSM
	0xFF	—	0xF0	0x**FF**	—	—	—

1. RESP1 sets 0xF0.
2. RESP2 sets 0xFF.
3. DATA1 and DATA2 are set to values corresponding to the requested content (see table below).

Function	CMND2 set by send command	DATA1 *returned* to receiving command	DATA2 *returned* to receiving command	Description
Query Brightness Level Fine	0xEB	0x00	1-100	*Returns* brightness.
Query Contrast Level Fine	0xED	0x00	1-100	*Returns* contrast.
Query ColorSaturation Level Fine	0xEF	0x00	1-100	*Returns* saturation.
Query Sharpness Level Fine	0xF1	0x00	1-100	*Returns* sharpness.
Query WhiteBalance Shift Red Fine	0xF5	0x00	1-100	*Returns* the white balance shift RED component.
Query WhiteBalance Shift Blue Fine	0xF7	0x00	1-100	*Returns* the white balance shift BLUE component.
	Other	0x00	0x00	Invalid

5.12 Original Command 9 (In-House Custom Parameter No. 9: DayNight Setting Ex)

An extended command unique to this specification. The checksum (CKSM) calculation is omitted from this chapter, as we have adopted the method outlined for Pelco-D in Chapter 3. New commands have been added for fine control of day/night parameters.

(0) Command sent:

Set the CKSM to the 8-bit sum of ADDR through DATA2.

(1) Response (General Response):

Set the CKSM to the 8-bit sum of ALARMS and the value returned for CKSM.

(2) Response (Extended Response):

Set the CKSM to the 8-bit sum of ADDR through DATA2.

(3) Response (Query Response):

Set the CKSM to the 8-bit sum of ADDR through DATA15 (*in-house custom parameter*).

(4) Response (Extended Response 2, an in-house custom parameter):

Set the CKSM to the 8-bit sum of ADDR through DATA2.

5.12.1 Set DayNight Mode

A command used to set the extended day/night mode.

■ Send command

Byte	1	2	3	4	5	6	7
	SYNC	ADDR	CMND1	CMND2	DATA1	DATA2	CKSM
	0xFF	—	0xF1	0x01	0x00	DN_MODE	—

1. DATA1 is fixed at 0x00.
2. DATA2 sets DN_MODE.

■ DN_MODE arguments

DATA2	Description
0x00	AUTO
0x01	AUTO&SCHEDULED
0x02	SCHEDULED
0x03	DAY
0x04	NIGHT
Other	AUTO

■ Receive command

Byte	1	2	3	4
	SYNC	ADDR	ALARMS	CKSM
	0xFF	—	0x00	—

5.12.2 Set Day to Night Threshold

A command used to set the threshold brightness for switching from day to night mode.

■ Send command

Byte	1	2	3	4	5	6	7
	SYNC	ADDR	CMND1	CMND2	DATA1	DATA2	CKSM
	0xFF	—	0xF1	0x03	0x00	D2N_TH	—

1. DATA1 is fixed at 0x00.
2. DATA2 sets D2N_TH.

■ D2N_TH arguments

DATA2	Description
0x00-0xFF	0 – 255

■ Receive command

Byte	1	2	3	4
	SYNC	ADDR	ALARMS	CKSM
	0xFF	—	0x00	—

5.12.3 Set Night to Day Threshold

A command used to set the threshold brightness for switching from night to day mode.

■ Send command

Byte	1	2	3	4	5	6	7
	SYNC	ADDR	CMND1	CMND2	DATA1	DATA2	CKSM
	0xFF	—	0xF1	0x05	0x00	N2D_TH	—

1. DATA1 is fixed at 0x00.
2. DATA2 sets N2D_TH.

■ N2D_TH arguments

DATA2	Description
0x00-0xFF	0 – 255

■ Receive command

Byte	1	2	3	4
	SYNC	ADDR	ALARMS	CKSM
	0xFF	—	0x00	—

5.12.4 Set DayNight Auto Delay

A command used to set the delay (in seconds) for switching between day and night modes.

■ Send command

Byte	1	2	3	4	5	6	7
	SYNC	ADDR	CMND1	CMND2	DATA1	DATA2	CKSM
	0xFF	—	0xF1	0x07	0x00	AUTO_DELAY	—

1. DATA1 is fixed at 0x00.
2. DATA2 sets AUTO_DELAY.

■ AUTO_DELAY arguments

DATA2	Description
0x00–0x3C	0 –60
Other	7

■ Receive command

Byte	1	2	3	4
	SYNC	ADDR	ALARMS	CKSM
	0xFF	—	0x00	—

5.12.5 Set Day Start Time

A command used to set the start time (SCHEDULED and AUTO&SCHEDULED) for day mode.

■ Send command

Byte	1	2	3	4	5	6	7
	SYNC	ADDR	CMND1	CMND2	DATA1	DATA2	CKSM
	0xFF	—	0xF1	0x09	DAYTIME_HH	DAYTIME_MM	—

1. DATA1 sets DAYTIME_HH.
2. DATA2 sets DAYTIME_MM.

■ DAYTIME_HH arguments

DATA2	Description
0x00–0x17	00–23
Other	07:00

■ DAYTIME_MM arguments

DATA2	Description
0x00–0x3B	00–59
Other	07:00

■ Receive command

Byte	1	2	3	4
	SYNC	ADDR	ALARMS	CKSM
	0xFF	—	0x00	—

5.12.6 Set Night Start Time

A command used to set the start time (SCHEDULED and AUTO&SCHEDULED) for night mode.

■ Send command

Byte	1	2	3	4	5	6	7
	SYNC	ADDR	CMND1	CMND2	DATA1	DATA2	CKSM
	0xFF	—	0xF1	0x0B	NIGHTTIME_HH	NIGHTTIME_MM	—

1. DATA1 sets NIGHTTIME_HH.
2. DATA2 sets NIGHTTIME_MM.

■ NIGHTTIME_HH arguments

DATA2	Description
0x00–0x17	00–23
Other	17:00

■ NIGHTTIME_MM arguments

DATA2	Description
0x00–0x3B	00–59
Other	17:00

■ Receive command

Byte	1	2	3	4
	SYNC	ADDR	ALARMS	CKSM
	0xFF	—	0x00	—

5.12.7 Set Optical Filter Day

A command used to set the optical filter for day mode.

■ Send command

Byte	1	2	3	4	5	6	7
	SYNC	ADDR	CMND1	CMND2	DATA1	DATA2	CKSM
	0xFF	—	0xF1	0x0D	0x00	OPT_DAY	—

1. DATA1 is fixed at 0x00.
2. DATA2 sets OPT_DAY.

■OPT_DAY arguments

DATA2	Description
0x00	IRC
0x01	VLC
Other	IRC

■ Receive command

Byte	1	2	3	4
	SYNC	ADDR	ALARMS	CKSM
	0xFF	—	0x00	—

5.12.8 Set Optical Filter Night

A command used to set the optical filter for night mode.

■ Send command

Byte	1	2	3	4	5	6	7
	SYNC	ADDR	CMND1	CMND2	DATA1	DATA2	CKSM
	0xFF	—	0xF1	0x0F	0x00	OPT_NIGHT	—

1. DATA1 is fixed at 0x00.
2. DATA2 sets OPT_NIGHT.

■ OPT_NIGHT arguments

DATA2	Description
0x00	CLEAR
0x01	VLC
Other	CLEAR

■ Receive command

Byte	1	2	3	4
	SYNC	ADDR	ALARMS	CKSM
	0xFF	—	0x00	—

5.12.9 <Reserved>

5.12.10 Query DayNight Setting Ex (Query DayNight Setting Ex Response)

A command that returns extended day/night mode parameters.

■ Send command

Byte	1	2	3	4	5	6	7
	SYNC	ADDR	CMND1	CMND2	DATA1	DATA2	CKSM
	0xFF	—	0xF1	0x1D	—	0x00	—

1. DATA1 is the CMND2 query target (see the table below).
2. DATA2 is fixed at 0x00.

■ Receive command (Extended Response 2)

Byte	1	2	3	4	5	6	7
	SYNC	ADDR	RESP1	RESP2	DATA1	DATA2	CKSM
	0xFF	—	0xF1	0x1F	—	—	—

1. RESP1 sets 0xF1.
2. RESP2 sets 0x1F.
3. DATA1 and DATA2 are set to values corresponding to the requested content (see table below).

Function	CMND2 set by send command	DATA1 *returned* to receiving command	DATA2 *returned* to receiving command	Description
Query Night Mode	0x01	0x00	0x00-0x04	*Returns* the extended day/night mode.
Query Day to Night Threshold	0x03	0x00	0x00-0xFF	The threshold brightness for switching from day to night mode.
Query Night to Day Threshold	0x05	0x00	0x00-0xFF	The threshold brightness for switching from night to day mode.
Query DayNight Auto Delay	0x07	0x00	0x00-0x3C	The delay (in seconds) for switching between day and night modes.
Query Day Start Time	0x09	0x00-0x17	0x00-0x3B	The start time (SCHEDULED and AUTO&SCHEDULED) for day mode.
Query Night Start Time	0x0B	0x00-0x17	0x00-0x3B	The start time (SCHEDULED and AUTO&SCHEDULED) for night mode.
Query Optical Filter Day	0x0D	0x00	0x00-0x01	*Returns* the optical filter for day mode.
Query Optical Filter Night	0x0F	0x00	0x00-0x01	*Returns* the optical filter for night mode.
	Others	0x00	0x00	Invalid

5.13 Original Command 10 (In-House Custom Parameter No. 10: Zoom Focus Setting Ex)

An extended command unique to this specification. The checksum (CKSM) calculation is omitted from this chapter, as we have adopted the method outlined for Pelco-D in Chapter 3. New commands have been added for fine control of zoom and focus speed parameters.

(0) Command sent:

Set the CKSM to the 8-bit sum of ADDR through DATA2.

(1) Response (General Response):

Set the CKSM to the 8-bit sum of ALARMS and the value returned for CKSM.

(2) Response (Extended Response):

Set the CKSM to the 8-bit sum of ADDR through DATA2.

(3) Response (Query Response):

Set the CKSM to the 8-bit sum of ADDR through DATA15 (*in-house custom parameter*).

(4) Response (Extended Response 2, an in-house custom parameter):

Set the CKSM to the 8-bit sum of ADDR through DATA2.

5.13.1 Set Zoom Speed Ex

A command used to set the lens zoom speed.

■ Send command

Byte	1	2	3	4	5	6	7
	SYNC	ADDR	CMND1	CMND2	DATA1	DATA2	CKSM
	0xFF	—	0xF1	0x25	0x00	Z_SPEED	—

1. DATA1 is fixed at 0x00.
2. DATA2 sets Z_SPEED.

■ Z_SPEED arguments (time in seconds to go from widest angle to maximum zoom)

DATA2	Description	Values for existing command (5.2.1, “Set Zoom Speed”) are now as follows
0x01	Maximum Speed	0x03
0x02	Lower speed than maximum speed	0x03
0x03	Lower speed than 0x02	0x02
0x04	Lower speed than 0x03	0x02
0x05	Lower speed than 0x04	0x01
0x06	Lower speed than 0x05	0x01
0x07	Lower speed than 0x06	0x00
0x08	Lower speed than 0x07	0x00
0x09	Lower speed than 0x08	0x00
0x0A	Minumum Speed	0x00
Other	Handled as 0x01	0x03

■ Receive command

Byte	1	2	3	4
	SYNC	ADDR	ALARMS	CKSM
	0xFF	—	0x00	—

5.13.2 Set Focus Speed Ex

A command used to set the lens focus speed.

■ Send command

Byte	1	2	3	4	5	6	7
	SYNC	ADDR	CMND1	CMND2	DATA1	DATA2	CKSM
	0xFF	—	0xF1	0x27	0x00	F_SPEED	—

1. DATA1 is fixed at 0x00.
2. DATA2 sets F_SPEED.

■ F_SPEED arguments (time in seconds to go from minimum to maximum focus distance)

DATA2	Description	Values for existing command (5.2.2, “Set Focus Speed”) are now as follows
0x01	Maximum Speed	0x03
0x02	Lower speed than Maximum Speed	0x03
0x03	Lower speed than 0x02	0x02
0x04	Lower speed than 0x03	0x02
0x05	Lower speed than 0x04	0x01
0x06	Lower speed than 0x05	0x01
0x07	Lower speed than 0x06	0x00
0x08	Lower speed than 0x07	0x00
0x09	Lower speed than 0x08	0x00
0x0A	Minimum Speed	0x00
Other	Handled as 0x01	0x03

■ Receive command

Byte	1	2	3	4
	SYNC	ADDR	ALARMS	CKSM
	0xFF	—	0x00	—

5.13.3 Set Digital Zoom Ex

A command used to set the zoom ratio for digital zoom.

■ Send command

Byte	1	2	3	4	5	6	7
	SYNC	ADDR	CMND1	CMND2	DATA1	DATA2	CKSM
	0xFF	—	0xF1	0x21	0x00	DZ_MAG	—

1. DATA1 is fixed at 0x00.
2. DATA2 sets DZ_MAG.

■ DZ_MAG arguments

DATA2	Description	Notes
0x00	1.25×	Digital zoom is enabled and disabled via the existing command (F0 37).
0x01	1.50×	Ditto
0x02	1.75×	Ditto
0x03	2.00×	Ditto
Other	Handled as 0x00	Ditto

■ Receive command

Byte	1	2	3	4
	SYNC	ADDR	ALARMS	CKSM
	0xFF	—	0x00	—

5.13.4 Query Zoom Focus Speed Setting Ex (Query Zoom Focus Setting Ex Response)

A command that returns the 10-step parameters for zoom/focus.

■ Send command

Byte	1	2	3	4	5	6	7
	SYNC	ADDR	CMND1	CMND2	DATA1	DATA2	CKSM
	0xFF	—	0xF1	0x2D	—	0x00	—

1. DATA1 queries the setting for CMND2 (see table below).
2. DATA2 is fixed at 0x00.

■ Receive command (Extended Response 2)

Byte	1	2	3	4	5	6	7
	SYNC	ADDR	RESP1	RESP2	DATA1	DATA2	CKSM
	0xFF	—	0xF1	0x2F	—	—	—

- RESP1 sets 0xF1.
- RESP2 sets 0x2F.
- DATA1 and DATA2 are set to values corresponding to the requested content (see table below).

Function	CMND2 set by send command	DATA1 *returned* to receiving command	DATA2 *returned* to receiving command	Description
Query Digital Zoom Ex	0x21	0x00	0x00-0x03	Zoom ratio for digital zoom
Query Zoom Speed Ex	0x25	0x00	0x01-0x0A	Lens zoom speed
Query Focus Speed Ex	0x27	0x00	0x01-0x0A	Lens focus speed
	Other			Invalid

5.14 Original Command11

(0) Command sent:

Set the CKSM to the 8-bit sum of ADDR through DATA2.

(1) Response (General Response):

Set the CKSM to the 8-bit sum of ALARMS and the value returned for CKSM.

(2) Response (Extended Response):

Set the CKSM to the 8-bit sum of ADDR through DATA2.

(3) Response (Query Response):

Set the CKSM to the 8-bit sum of ADDR through DATA15 (*in-house custom parameter*).

(4) Response (Extended Response 2, an in-house custom parameter):

Set the CKSM to the 8-bit sum of ADDR through DATA2.

5.14.1 Set Focus Area Select

A command used to set the Fcus Area Select

■ Send command

Byte	1	2	3	4	5	6	7
	SYNC	ADDR	CMND1	CMND2	DATA1	DATA2	CKSM
	0xFF	—	0xF2	0x01	0x00	Parm1	—

1. DATA1 is fixed at 0x00.
2. DATA2 sets Parm1

■ Parm1 arguments

DATA2	Description	Notes
0x00	Fixed center	
0x01	Handled as 0x00	Reserved
0x02	Aera Select (5X9)	
Other	Handled as 0x00	

■ Receive command

Byte	1	2	3	4
	SYNC	ADDR	ALARMS	CKSM
	0xFF	—	0x00	—

5.14.2 Set Focus Area Position

A command used to set the Fcus Area Position

Caution: “Set Focus Area Position”, “Set Focus Area Start Position”, and “Set Focus Area End Position” are set the following steps.

1 Start the Focus Area Position setting

2 Set the Focus Area Start Position

3 Set the Focus Aera End Position

4 Fixed Focus Area Position setting

If other commands are used during the position setting, this process is invalided.

■ Send command

Byte	1	2	3	4	5	6	7
	SYNC	ADDR	CMND1	CMND2	DATA1	DATA2	CKSM
	0xFF	—	0xF2	0x03	0x00	Parm1	—

1．DATA1 is fixed at 0x00.

2．DATA2 sets Parm1

■ Parm1 arguments

DATA2	Description	Notes
0x00	Start the Area Position setting	
0x01	Fixed Area Position setting	

■ Receive command (Extended Response)

Byte	1	2	3	4	5	6	7
	SYNC	ADDR	RESP1	RESP2	DATA1	DATA2	CKSM
	0xFF	—	0xF2	0x03	0x00	Parm2	—

1．DATA1 is fixed at 0x00.

2．DATA2 as follows,

■ Parm2 arguments

DATA2(bit)	Description	Notes
0	Completed succesfull	
1	Position Setting Error	
Other	Handled as 0x00	

5.14.3 Set Focus Area Start Position

A command used to set the Fcus Area Start Position

Caution: “Set Focus Area Position”, “Set Focus Area Start Position”, and “Set Focus Area End Position” are set the following steps.

1 Start the Focus Area Position setting

2 Set the Focus Area Start Position

3 Set the Focus Aera End Position

4 Fixed Focus Area Position setting

If other commands are used during the position setting, this process is invalided.

■ Send command

Byte	1	2	3	4	5	6	7
	SYNC	ADDR	CMND1	CMND2	DATA1	DATA2	CKSM
	0xFF	—	0xF2	0x05	X coordinate	Y coordinate	—

●DATA1 and DATA2 are as follows

■ DATA1 and DATA2 arguments

DATA1	Description	Notes
0x00 To 0x12	Set the position of Left Upper Side of rectangle shape	Horizontal axis (0 to 5) In case of using more than 5, setting number is 5 as maximum divide number.
Other	Handled as 0x00	

DATA2	Description	Notes
0x00 To 0x12	Set the position of Left Upper Side of rectangle shape	Vertical axis (0 to 9) In case of using more than 9, setting number is 9 as maximum divide number.
Other	Handled as 0x00	

■ Receive command

Byte	1	2	3	4
	SYNC	ADDR	ALARMS	CKSM
	0xFF	—	0x00	—

5.14.4 Set Focus Area End Position

A command used to set the Fcus Area End Position
Caution: “Set Focus Area Position”, “Set Focus Area Start Position”, and “Set Focus Area End Position” are set the following steps.
1 Start the Focus Area Position setting
2 Set the Focus Area Start Position
3 Set the Focus Aera End Position
4 Fixed Focus Area Position setting
If other commands are used during the position setting, this process is invalided.

■ DATA1 and DATA2 arguments

DATA1	Description	Notes
0x00 To 0x12	Set the position of Right Lower Side of rectangle shape	Horizontal axis (0 to 5) In case of using more than 5, setting number is 5 as maximum divide number.
Other	Handled as 0x00	

DATA2	Description	Notes
0x00 To 0x12	Set the position of Right Lower Side of rectangle shape	Vertical axis (0 to 9) In case of using more than 9, setting number is 9 as maximum divide number.
Other	Handled as 0x00	

■ Receive command

Byte	1	2	3	4
	SYNC	ADDR	ALARMS	CKSM
	0xFF	—	0x00	—

5.14.5 Query Focus Area Setting

A command that returns Focus Area Setting

■ Send command

Byte	1	2	3	4	5	6	7
	SYNC	ADDR	CMND1	CMND2	DATA1	DATA2	CKSM
	0xFF	—	0xF2	0x09	0x00	0x00	—

●DATA1 and DATA2 are fixed at 0x00.

■ Receive command

Byte	1	2	3	4	5	6	7
	SYNC	ADDR	CMND1	CMND2	DATA1	DATA2	CKSM
	0xFF	—	0xF2	0x09	0x00	Parm1	—

●DATA2 as following table

■ DATA2 arguments

DATA2	Description	Notes
0x00	Center	
1	Area Select (5X9)	
Other	Handled as 0x00	

5.14.6 Query Focus Area Position

A command that returns Focus Area Position

■ Send command

Byte	1	2	3	4	5	6	7
	SYNC	ADDR	CMND1	CMND2	DATA1	DATA2	CKSM
	0xFF	—	0xF2	0x08	0x00	0x00	—

●DATA1 and DATA2 are fixed at 0x00.

■ Receive command (Query Response)

Byte	1	2	3	~	17	18
	SYNC	ADDR	DATA1		DATA15	CKSM
	0xFF	—	Parm1		Parm15	—

●DATA1 to Data17 as following table

■DATA2 arguments

DATA1 to DATA17	Description	Notes
Parm1	Left Upper Side	Horizontal
Parm2	Left Upper Side	Vertical
Parm3	Right Lower Side	Horizontal
Parm4	Right Lower Side	Vertical
Parm5 to 15	Reserved	Fixed at 0x00

EOD

Appendix

Appendix 1. Table of ZOOM Position vs Focal length for SX1600 FW Ver.1.0

Lens			Field of View			Digital ZOOM : OFF				Digital ZOOM (Continuous) : x1.25			
						Pelco (SX1600) : Set Zoom Position (0x00,0x4F) Query Zoom Position (0x00,0x83)			ONVIF (SX1600) Zoom control	Pelco (SX1600) : Set Zoom Position (0x00,0x4F) Query Zoom Position (0x00,0x83)			ONVIF (SX1600) Zoom control *
Motor Pulse	Focal Length		Vertical	Horizontal	Diagonal	CGI (SX1600) : SetAbsoluteZoomPosition GetAbsoluteZoomPosition		CGI (SX1600) : SetZoomControl GetZoomControl		CGI (SX1600) : SetAbsoluteZoomPosition GetAbsoluteZoomPosition		CGI (SX1600) : SetZoomControl GetZoomControl	
Steps	[mm]		[degree]			[DEC]	[HEX]	[DEC]	[DEC]	[DEC]	[HEX]	[DEC]	[DEC]
1	20.0	1.00	11.850	21.010	24.080	0	0	1	0.000	1.00	0	0	1	0.000
2	20.5	1.24	11.590	20.550	23.550	336	150		0.005	1.24	269	10D		0.004
3	20.9	1.48	11.340	20.090	23.030	672	2A0		0.010	1.48	538	21A		0.008
4	21.4	1.70	11.100	19.660	22.530	991	3DF		0.015	1.70	793	319		0.012
5	21.9	1.94	10.850	19.220	22.030	1328	530		0.020	1.94	1062	426		0.016
6	22.4	2.19	10.600	18.770	21.510	1680	690	2	0.026	2.19	1344	540	2	0.021
7	22.9	2.43	10.360	18.360	21.030	2016	7E0		0.031	2.43	1613	64D		0.025
8	23.4	2.66	10.140	17.950	20.560	2353	931		0.036	2.66	1882	75A		0.029
9	23.9	2.89	9.920	17.570	20.130	2672	A70		0.041	2.89	2137	859		0.033
10	24.4	3.13	9.710	17.190	19.690	3008	BC0		0.046	3.13	2406	966		0.037
11	25.0	3.38	9.480	16.790	19.230	3361	D21	3	0.051	3.38	2689	A81	3	0.041
12	25.6	3.61	9.270	16.420	18.810	3697	E71		0.056	3.61	2957	B8D		0.045
13	26.2	3.85	9.070	16.050	18.390	4033	FC1		0.062	3.85	3226	C9A		0.049
14	26.7	4.08	8.880	15.720	18.000	4352	1100		0.066	4.08	3482	D9A		0.053
15	27.4	4.31	8.680	15.370	17.610	4688	1250		0.072	4.31	3751	EA7		0.057
16	28.0	4.56	8.480	15.020	17.200	5041	13B1	4	0.077	4.56	4033	FC1	4	0.062
17	28.7	4.80	8.300	14.690	16.820	5377	1501		0.082	4.80	4302	10CE		0.066
18	29.3	5.04	8.120	14.360	16.450	5713	1651		0.087	5.04	4571	11DB		0.070
19	29.9	5.26	7.950	14.060	16.100	6033	1791		0.092	5.26	4826	12DA		0.074
20	30.6	5.50	7.770	13.750	15.750	6369	18E1		0.097	5.50	5095	13E7		0.078
21	31.4	5.75	7.590	13.440	15.390	6722	1A42	5	0.103	5.75	5377	1501	5	0.082
22	32.1	5.99	7.420	13.140	15.050	7058	1B92		0.108	5.99	5646	160E		0.086
23	32.8	6.23	7.260	12.850	14.720	7394	1CE2		0.113	6.23	5915	171B		0.090
24	33.5	6.45	7.110	12.580	14.410	7713	1E21		0.118	6.45	6170	181A		0.094
25	34.3	6.69	6.950	12.310	14.090	8049	1F71		0.123	6.69	6439	1927		0.098
26	35.1	6.94	6.790	12.020	13.770	8402	20D2	6	0.128	6.94	6722	1A42	6	0.103
27	35.9	7.18	6.640	11.760	13.470	8738	2222		0.133	7.18	6990	1B4E		0.107
28	36.7	7.41	6.500	11.500	13.170	9074	2372		0.138	7.41	7259	1C5B		0.111
29	37.5	7.64	6.360	11.260	12.900	9393	24B1		0.143	7.64	7515	1D5B		0.115
30	38.4	7.88	6.220	11.010	12.610	9729	2601		0.148	7.88	7784	1E68		0.119
31	39.3	8.13	6.080	10.760	12.320	10082	2762	7	0.154	8.13	8066	1F82	7	0.123
32	40.2	8.36	5.950	10.520	12.050	10418	28B2		0.159	8.37	8335	208F		0.127
33	41.1	8.60	5.820	10.290	11.790	10754	2A02		0.164	8.60	8604	219C		0.131
34	42.0	8.83	5.690	10.080	11.540	11074	2B42		0.169	8.83	8859	229B		0.135
35	42.9	9.07	5.570	9.860	11.290	11410	2C92		0.174	9.07	9128	23A8		0.139
36	43.9	9.32	5.440	9.630	11.030	11763	2DF3	8	0.179	9.32	9410	24C2	8	0.144
37	44.9	9.55	5.320	9.420	10.790	12099	2F43		0.185	9.55	9679	25CF		0.148
38	45.9	9.79	5.200	9.210	10.550	12435	3093		0.190	9.79	9948	26DC		0.152
39	46.9	10.02	5.090	9.020	10.330	12754	31D2		0.195	10.02	10203	27DB		0.156
40	48.0	10.25	4.980	8.820	10.100	13090	3322		0.200	10.25	10472	28E8		0.160
41	49.1	10.50	4.870	8.620	9.870	13443	3483	9	0.205	10.50	10754	2A02	9	0.164
42	50.3	10.74	4.760	8.430	9.660	13779	35D3		0.210	10.74	11023	2B0F		0.168
43	51.4	10.98	4.660	8.240	9.440	14115	3723		0.215	10.98	11292	2C1C		0.172
44	52.5	11.20	4.560	8.070	9.250	14435	3863		0.220	11.20	11548	2D1C		0.176
45	53.7	11.44	4.460	7.890	9.040	14771	39B3		0.225	11.44	11816	2E28		0.180
46	55.0	11.69	4.360	7.710	8.840	15123	3B13	10	0.231	11.69	12099	2F43	10	0.185
47	56.2	11.93	4.260	7.540	8.640	15460	3C84		0.236	11.93	12368	3050		0.189
48	57.5	12.17	4.170	7.380	8.450	15796	3DB4		0.241	12.17	12636	315C		0.193
49	58.8	12.39	4.080	7.220	8.280	16115	3EF3		0.246	12.39	12892	325C		0.197
50	60.1	12.63	3.990	7.070	8.090	16451	4043		0.251	12.63	13161	3369		0.201
51	61.5	12.88	3.900	6.900	7.910	16804	41A4	11	0.256	12.88	13443	3483	11	0.205
52	62.9	13.12	3.810	6.750	7.740	17140	42F4		0.262	13.12	13712	3590		0.209
53	64.4	13.35	3.730	6.600	7.570	17476	4444		0.267	13.35	13981	369D		0.213
54	65.8	13.58	3.650	6.470	7.410	17795	4583		0.272	13.58	14236	379C		0.217
55	67.2	13.82	3.570	6.320	7.250	18131	46D3		0.277	13.82	14505	38A9		0.221
56	68.8	14.07	3.490	6.180	7.080	18484	4834	12	0.282	14.07	14787	39C3	12	0.226
57	70.4	14.30	3.410	6.040	6.920	18820	4984		0.287	14.30	15056	3AD0		0.230
58	72.0	14.54	3.340	5.910	6.770	19156	4AD4		0.292	14.54	15325	3BDD		0.234
59	73.6	14.77	3.270	5.790	6.630	19476	4C14		0.297	14.77	15581	3CDD		0.238
60	75.2	15.01	3.200	5.660	6.480	19812	4D64		0.302	15.01	15849	3DE9		0.242
61	77.0	15.26	3.120	5.530	6.340	20165	4EC5	13	0.308	15.26	16132	3F04	13	0.246
62	78.8	15.49	3.050	5.410	6.200	20501	5015		0.313	15.49	16401	4011		0.250
63	80.6	15.73	2.990	5.290	6.060	20837	5165		0.318	15.73	16669	411D		0.254
64	82.3	15.96	2.920	5.180	5.930	21156	52A4		0.323	15.96	16925	421D		0.258
65	84.2	16.19	2.860	5.060	5.800	21492	53F4		0.328	16.19	17194	432A		0.262
66	86.2	16.44	2.790	4.950	5.670	21845	5555	14	0.333	16.44	17476	4444	14	0.267
67	88.2	16.68	2.730	4.840	5.550	22181	56A5		0.338	16.68	17745	4551		0.271
68	90.2	16.92	2.670	4.730	5.420	22517	57F5		0.344	16.92	18014	465E		0.275
69	92.1	17.14	2.620	4.630	5.310	22836	5934		0.348	17.14	18269	475D		0.279
70	94.2	17.38	2.560	4.530	5.190	23173	5A85		0.354	17.38	18538	486A		0.283
71	96.4	17.63	2.500	4.430	5.070	23525	5BE5	15	0.359	17.63	18820	4984	15	0.287
72	98.6	17.87	2.440	4.330	4.960	23861	5D35		0.364	17.87	19089	4A91		0.291
73	100.9	18.11	2.390	4.240	4.850	24198	5E86		0.369	18.11	19358	4B9E		0.295
74	103.1	18.33	2.340	4.150	4.750	24517	5FC5		0.374	18.33	19613	4C9D		0.299
75	105.4	18.57	2.290	4.060	4.650	24853	6115		0.379	18.57	19882	4DAA		0.303
76	107.9	18.82	2.240	3.960	4.540	25206	6276	16	0.385	18.82	20165	4EC5	16	0.308
77	110.4	19.06	2.190	3.880	4.440	25542	63C6		0.390	19.06	20433	4FD1		0.312
78	112.9	19.29	2.140	3.790	4.340	25878	6516		0.395	19.29	20702	50DE		0.316
79	115.3	19.52	2.100	3.710	4.250	26197	6655		0.400	19.52	20958	51DE		0.320
80	117.9	19.76	2.050	3.630	4.160	26533	67A5		0.405	19.76	21227	52EB		0.324
81	120.7	20.01	2.000	3.550	4.060	26886	6906	17	0.410	20.01	21509	5405	17	0.328
82	123.5	20.24	1.960	3.470	3.970	27222	6A56		0.415	20.24	21778	5512		0.332
83	126.3	20.48	1.910	3.390	3.890	27558	6BA6		0.421	20.48	22047	561F		0.336
84	129.0	20.71	1.870	3.320	3.810	27878	6CE6		0.425	20.71	22302	571E		0.340
85	132.0	20.95	1.830	3.250	3.720	28214	6E36		0.431	20.95	22571	582B		0.344
86	135.1	21.19	1.790	3.170	3.640	28567	6F97	18	0.436	21.19	22853	5945	18	0.349
87	138.2	21.43	1.750	3.100	3.560	28903	70E7		0.441	21.43	23122	5A52		0.353
88	141.3	21.67	1.710	3.040	3.480	29239	7237		0.446	21.67	23391	5B5F		0.357
89	144.4	21.90	1.680	2.970	3.410	29558	7376		0.451	21.90	23646	5C5E		0.361
90	147.6	22.13	1.640	2.910	3.330	29894	74C6		0.456	22.13	23915	5D6B		0.365
91	151.2	22.38	1.600	2.840	3.250	30247	7627	19	0.462	22.38	24198	5E86	19	0.369
92	154.6	22.62	1.570	2.780	3.180	30583	7777		0.467	22.62	24466	5F92		0.373
93	158.1	22.86	1.530	2.720	3.110	30919	78C7		0.472	22.86	24735	609F		0.377
94	161.5	23.08	1.500	2.660	3.050	31238	7A06		0.477	23.08	24991	619F		0.381
95	165.2	23.32	1.470	2.600	2.980	31574	7B56		0.482	23.32	25260	62AC		0.385
96	169.1	23.57	1.430	2.540	2.910	31927	7CB7	20	0.487	23.57	25542	63C6	20	0.390
97	173.0	23.81	1.400	2.490	2.850	32263	7E07		0.492	23.81	25811	64D3		0.394
98	176.9	24.05	1.370	2.430	2.790	32599	7F57		0.497	24.05	26080	65E0		0.398
99	180.7	24.27	1.340	2.380	2.730	32919	8097		0.502	24.27	26335	66DF		0.402
100	184.9	24.51	1.310	2.330	2.670	33255	81E7		0.507	24.51	26604	67EC		0.406
101	189.3	24.76	1.280	2.270	2.610	33608	8348	21	0.513	24.76	26886	6906	21	0.410
102	193.6	25.00	1.260	2.220	2.550	33944	8498		0.518	25.00	27155	6A13		0.414
103	198.0	25.23	1.230	2.180	2.490	34280	85E8		0.523	25.23	27424	6B20		0.418
104	202.2	25.46	1.200	2.130	2.440	34599	8727		0.528	25.46	27679	6C1F		0.422
105	206.8	25.70	1.180	2.080	2.390	34935	8877		0.533	25.70	27948	6D2C		0.426
106	211.8	25.95	1.150	2.030	2.330	35288	89D8	22	0.538	25.95	28230	6E48	22	0.431
107	216.6	26.18	1.120	1.990	2.280	35624	8B28		0.544	26.18	28499	6F53		0.435
108	221.5	26.42	1.100	1.950	2.230	35960	8C78		0.549	26.42	28768	7060		0.439
109	226.3	26.65	1.080	1.910	2.180	36280	8DB8		0.554	26.65	29024	7160		0.443
110	231.4	26.89	1.050	1.860	2.140	36616	8F08		0.559	26.88	29292	726C		0.447
111	236.9	27.13	1.030	1.820	2.090	36968	9068	23	0.564	27.13	29575	7387	23	0.451
112	242.3	27.37	1.010	1.780	2.040	37305	91B9		0.569	27.37	29844	7494		0.455
113	247.8	27.61	0.980	1.740	2.000	37641	9309		0.574	27.61	30112	75A0		0.459
114	253.2	27.84	0.960	1.710	1.950	37960	9448		0.579	27.84	30368	76A0		0.463
115	258.9	28.07	0.940	1.670	1.910	38296	9598		0.584	28.07	30637	77AD		0.467
116	265.1	28.32	0.920	1.630	1.870	38649	96F9	24	0.590	28.32	30919	78C7	24	0.472
117	271.2	28.56	0.900	1.590	1.830	38985	9849		0.595	28.56	31188	79D4		0.476
118	277.3	28.80	0.880	1.560	1.790	39321	9999		0.600	28.80	31457	7AE1		0.480
119	283.3	29.02	0.860	1.530	1.750	39640	9AD8		0.605	29.02	31712	7BE0		0.484
120	289.7	29.26	0.840	1.490	1.710	39976	9C28		0.610	29.26	31981	7CED		0.488
121	296.6	29.51	0.820	1.460	1.670	40329	9D89	25	0.615	29.51	32263	7E07	25	0.492
122	303.4	29.75	0.800	1.430	1.630	40665	9ED9		0.621	29.75	32532	7F14		0.496
123	310.3	29.98	0.790	1.390	1.600	41001	A029		0.626	29.99	32801	8021		0.501
124	317.0	30.21	0.770	1.370	1.560	41321	A169		0.631	30.21	33057	8121		0.504
125	324.2	30.45	0.750	1.340	1.530	41657	A2B9		0.636	30.45	33325	822D		0.509
126	331.9	30.70	0.740	1.300	1.500	42010	A41A	26	0.641	30.70	33608	8348	26	0.513
127	339.5	30.94	0.720	1.280	1.460	42346	A56A		0.646	30.94	33877	8455		0.517
128	347.2	31.17	0.700	1.250	1.430	42682	A6BA		0.651	31.17	34145	8561		0.521
129	354.7	31.40	0.690	1.220	1.400	43001	A7F9		0.656	31.40	34401	8661		0.525
130	362.7	31.64	0.670	1.190	1.370	43337	A949		0.661	31.64	34670	876E		0.529
131	371.4	31.89	0.660	1.170	1.340	43690	AAAA	27	0.667	31.89	34952	8888	27	0.533
132	379.8	32.12	0.640	1.140	1.310	44026	ABFA		0.672	32.12	35221	8995		0.537
133	388.4	32.36	0.630	1.120	1.280	44362	AD4A		0.677	32.36	35490	8AA2		0.542
134	396.8	32.59	0.620	1.090	1.250	44681	AE89		0.682	32.59	35745	8BA1		0.545
135	405.9	32.82	0.600	1.070	1.230	45018	AFDA		0.687	32.82	36014	8CAE		0.550
136	415.5	33.07	0.590	1.040	1.200	45370	B13A	28	0.692	33.07	36296	8DC8	28	0.554
137	425.0	33.31	0.580	1.020	1.170	45706	B28A		0.697	33.31	36565	8ED5		0.558

138	434.7	33.55	0.560	1.000	1.150
139	444.0	33.77	0.550	0.980	1.120
140	454.1	34.01	0.540	0.960	1.100
141	465.0	34.26	0.530	0.930	1.070
142	475.5	34.50	0.520	0.910	1.050
143	486.4	34.74	0.500	0.890	1.020
144	496.8	34.96	0.490	0.880	1.000
145	508.1	35.20	0.480	0.860	0.980
146	520.3	35.45	0.470	0.840	0.960
147	532.1	35.69	0.460	0.820	0.940
148	544.2	35.92	0.450	0.800	0.920
149	555.9	36.15	0.440	0.780	0.900
150	568.5	36.39	0.430	0.770	0.880
151	582.1	36.64	0.420	0.750	0.860
152	595.3	36.88	0.410	0.730	0.840
153	608.9	37.11	0.400	0.720	0.820
154	622.0	37.34	0.400	0.700	0.800
155	636.2	37.58	0.390	0.690	0.790
156	651.3	37.83	0.380	0.670	0.770
157	666.1	38.06	0.370	0.650	0.750
158	681.2	38.30	0.360	0.640	0.730
159	695.8	38.53	0.350	0.630	0.720
160	711.6	38.76	0.350	0.610	0.700
161	728.7	39.01	0.340	0.600	0.690
162	745.4	39.25	0.330	0.590	0.670
163	762.5	39.49	0.320	0.570	0.660
164	779.0	39.71	0.320	0.560	0.640
165	796.5	39.95	0.310	0.550	0.630
166	822.1	1.03	0.300	0.532	0.609
167	848.0	1.06	0.291	0.516	0.591
168	873.9	1.09	0.282	0.500	0.574
169	898.6	1.12	0.275	0.487	0.558
170	924.5	1.16	0.267	0.473	0.542
171	951.7	1.19	0.259	0.460	0.527
172	977.6	1.22	0.253	0.448	0.513
173	1,003.6	1.25	0.246	0.436	0.500
174	1,028.2	1.29	0.240	0.426	0.488
175	1,054.2	1.32	0.234	0.415	0.476
176	1,081.3	1.35	0.228	0.405	0.464
177	1,107.3	1.38	0.223	0.396	0.454
178	1,133.2	1.42	0.218	0.387	0.443
179	1,157.9	1.45	0.213	0.378	0.434
180	1,183.8	1.48	0.209	0.370	0.424
181	1,211.0	1.51	0.204	0.362	0.415
182	1,236.9	1.55	0.200	0.354	0.406
183	1,263.0	1.58	0.196	0.347	0.398
184	1,287.5	1.61	0.192	0.341	0.390
185	1,313.4	1.64	0.188	0.334	0.383
186	1,340.7	1.68	0.184	0.327	0.375
187	1,366.7	1.71	0.181	0.321	0.368
188	1,392.6	1.74	0.177	0.315	0.361
189	1,417.1	1.77	0.174	0.310	0.355
190	1,443.1	1.80	0.171	0.304	0.349
191	1,470.4	1.84	0.168	0.298	0.342
192	1,496.3	1.87	0.165	0.293	0.336
193	1,522.2	1.90	0.162	0.288	0.331
194	1,546.9	1.93	0.160	0.284	0.325
195	1,572.8	1.97	0.157	0.279	0.320
196	1,600.0	2.00	0.154	0.274	0.315
197	1,615.4		0.153	0.272	0.312
198	1,630.8		0.152	0.269	0.309
199	1,646.2		0.150	0.267	0.306
200	1,661.6		0.149	0.264	0.303
201	1,676.9		0.147	0.262	0.300
202	1,692.3		0.146	0.259	0.297
203	1,707.7		0.145	0.257	0.295
204	1,723.1		0.143	0.255	0.292
205	1,738.5		0.142	0.252	0.290
206	1,753.9		0.141	0.250	0.287
207	1,769.3		0.140	0.248	0.285
208	1,784.6		0.138	0.246	0.282
209	1,800.0		0.137	0.244	0.280
210	1,815.4		0.136	0.242	0.277
211	1,830.8		0.135	0.240	0.275
212	1,846.2		0.134	0.238	0.273
213	1,861.5		0.133	0.236	0.270
214	1,877.0		0.132	0.234	0.268
215	1,892.3		0.131	0.232	0.266
216	1,907.7		0.130	0.230	0.264
217	1,923.1		0.129	0.228	0.262
218	1,938.5		0.127	0.226	0.260
219	1,953.9		0.126	0.225	0.258
220	1,969.2		0.126	0.223	0.256
221	1,984.6		0.125	0.221	0.254
222	2,000.0		0.124	0.220	0.252

46043	B3DB			0.703	33.55	36834	8FE2		0.562
46362	B51A			0.707	33.77	37089	90E1		0.566
46698	B66A			0.713	34.01	37358	91EE		0.570
47051	B7CB		29	0.718	34.26	37641	9309	29	0.574
47387	B91B			0.723	34.50	37909	9415		0.578
47723	BA6B			0.728	34.74	38178	9522		0.583
48042	BBAA			0.733	34.96	38434	9622		0.586
48378	BCFA			0.738	35.20	38703	972F		0.591
48731	BE5B		30	0.744	35.45	38985	9849	30	0.595
49067	BFAB			0.749	35.69	39254	9956		0.599
49403	C0FB			0.754	35.93	39523	9A63		0.603
49723	C23B			0.759	36.15	39778	9B62		0.607
50059	C38B			0.764	36.39	40047	9C6F		0.611
50412	C4EC		31	0.769	36.64	40329	9D89	31	0.615
50748	C63C			0.774	36.88	40598	9E96		0.619
51084	C78C			0.779	37.11	40867	9FA3		0.624
51403	C8CB			0.784	37.34	41122	A0A2		0.627
51739	CA1B			0.789	37.58	41391	A1AF		0.632
52092	CB7C		32	0.795	37.83	41674	A2CA	32	0.636
52428	CCCC			0.800	38.06	41942	A3D6		0.640
52764	CE1C			0.805	38.30	42211	A4E3		0.644
53083	CF5B			0.810	38.53	42467	A5E3		0.648
53419	D0AB			0.815	38.76	42736	A6F0		0.652
53772	D20C		33	0.821	39.01	43018	A80A	33	0.656
54108	D35C			0.826	39.25	43287	A917		0.661
54444	D4AC			0.831	39.49	43556	AA24		0.665
54764	D5EC			0.836	39.71	43811	AB23		0.669
55100	D73C			0.841	39.95	44080	AC30		0.673
55453	D89D		34	0.846	1.03	44362	AD4A	34	0.677
55789	D9ED			0.851	1.06	44631	AE57		0.681
56125	DB3D			0.856	1.09	44900	AF64		0.685
56444	DC7C			0.861	1.12	45155	B063		0.689
56780	DDCC			0.866	1.16	45424	B170		0.693
57133	DF2D		35	0.872	1.19	45706	B28A	35	0.697
57469	E07D			0.877	1.22	45975	B397		0.702
57805	E1CD			0.882	1.25	46244	B4A4		0.706
58125	E30D			0.887	1.29	46500	B5A4		0.710
58461	E45D			0.892	1.32	46768	B6B0		0.714
58813	E5BD		36	0.897	1.35	47051	B7CB	36	0.718
59150	E70E			0.903	1.38	47320	B8D8		0.722
59486	E85E			0.908	1.42	47588	B9E4		0.726
59805	E99D			0.913	1.45	47844	BAE4		0.730
60141	EAED			0.918	1.48	48113	BBF1		0.734
60494	EC4E		37	0.923	1.51	48395	BD0B	37	0.738
60830	ED9E			0.928	1.55	48664	BE18		0.743
61166	EEEE			0.933	1.58	48933	BF25		0.747
61485	F02D			0.938	1.61	49188	C024		0.751
61821	F17D			0.943	1.64	49457	C131		0.755
62174	F2DE		38	0.949	1.68	49739	C24B	38	0.759
62510	F42E			0.954	1.71	50008	C358		0.763
62846	F57E			0.959	1.74	50277	C465		0.767
63166	F6BE			0.964	1.77	50533	C565		0.771
63502	F80E			0.969	1.80	50801	C671		0.775
63855	F96F		39	0.974	1.84	51084	C78C	39	0.779
64191	FABF			0.979	1.87	51353	C899		0.784
64527	FC0F			0.985	1.90	51621	C9A5		0.788
64846	FD4E			0.989	1.93	51877	CAA5		0.792
65182	FE9E			0.995	1.97	52146	CBB2		0.796
65535	FFFF		40	1.000	2.00	52428	CCCC	40	0.800
					2.02	52933	CEC5		0.808
					2.04	53437	D0BD		0.815
					2.06	53941	D2B5	41	0.823
					2.08	54445	D4AD		0.831
					2.10	54949	D6A5	42	0.838
					2.12	55453	D89D		0.846
					2.13	55957	DA95		0.854
					2.15	56461	DC8D	43	0.862
					2.17	56966	DE86		0.869
					2.19	57470	E07E	44	0.877
					2.21	57974	E276		0.885
					2.23	58478	E46E		0.892
					2.25	58982	E666	45	0.900
					2.27	59486	E85E		0.908
					2.29	59990	EA56	46	0.915
					2.31	60494	EC4E		0.923
					2.33	60998	EE46		0.931
					2.35	61503	F03F	47	0.938
					2.37	62007	F237		0.946
					2.38	62511	F42F	48	0.954
					2.40	63015	F627		0.962
					2.42	63519	F81F		0.969
					2.44	64023	FA17	49	0.977
					2.46	64527	FC0F		0.985
					2.48	65031	FE07		0.992
					2.50	65535	FFFF	50	1.000

* Note

Lens			Field of View		
Motor Pulse	Focal Length		Vertical	Horizontal	Diagonal
Steps	[mm]			[degree]	
1	20.0	1.00	11.850	21.010	24.080
2	20.5	1.24	11.590	20.550	23.550
3	20.9	1.48	11.340	20.090	23.030
4	21.4	1.70	11.100	19.660	22.530
5	21.9	1.94	10.850	19.220	22.030
6	22.4	2.19	10.600	18.770	21.510
7	22.9	2.43	10.360	18.360	21.030
8	23.4	2.66	10.140	17.950	20.560
9	23.9	2.89	9.920	17.570	20.130
10	24.4	3.13	9.710	17.190	19.690
11	25.0	3.38	9.480	16.790	19.230
12	25.6	3.61	9.270	16.420	18.810
13	26.2	3.85	9.070	16.050	18.390
14	26.7	4.08	8.880	15.720	18.000
15	27.4	4.31	8.680	15.370	17.610
16	28.0	4.56	8.480	15.020	17.200
17	28.7	4.80	8.300	14.690	16.820
18	29.3	5.04	8.120	14.360	16.450
19	29.9	5.26	7.950	14.060	16.100
20	30.6	5.50	7.770	13.750	15.750
21	31.4	5.75	7.590	13.440	15.390
22	32.1	5.99	7.420	13.140	15.050
23	32.8	6.23	7.260	12.850	14.720
24	33.5	6.45	7.110	12.580	14.410
25	34.3	6.69	6.950	12.310	14.090
26	35.1	6.94	6.790	12.020	13.770
27	35.9	7.18	6.640	11.760	13.470
28	36.7	7.41	6.500	11.500	13.170
29	37.5	7.64	6.360	11.260	12.900
30	38.4	7.88	6.220	11.010	12.610
31	39.3	8.13	6.080	10.760	12.320
32	40.2	8.37	5.950	10.520	12.050
33	41.1	8.60	5.820	10.290	11.790
34	42.0	8.83	5.690	10.080	11.540
35	42.9	9.07	5.570	9.860	11.290
36	43.9	9.32	5.440	9.630	11.030
37	44.9	9.55	5.320	9.420	10.790
38	45.9	9.79	5.200	9.210	10.550
39	46.9	10.02	5.090	9.020	10.330
40	48.0	10.25	4.980	8.820	10.100
41	49.1	10.50	4.870	8.620	9.870
42	50.3	10.74	4.760	8.430	9.660
43	51.4	10.98	4.660	8.240	9.440
44	52.5	11.20	4.560	8.070	9.250
45	53.7	11.44	4.460	7.890	9.040
46	55.0	11.69	4.360	7.710	8.840
47	56.2	11.93	4.260	7.540	8.640
48	57.5	12.17	4.170	7.380	8.450
49	58.8	12.39	4.080	7.220	8.280
50	60.1	12.63	3.990	7.070	8.090
51	61.5	12.88	3.900	6.900	7.910
52	62.9	13.12	3.810	6.750	7.740
53	64.4	13.35	3.730	6.600	7.570
54	65.8	13.58	3.650	6.470	7.410
55	67.2	13.82	3.570	6.320	7.250
56	68.8	14.07	3.490	6.180	7.080
57	70.4	14.30	3.410	6.040	6.920
58	72.0	14.54	3.340	5.910	6.770
59	73.6	14.77	3.270	5.790	6.630
60	75.2	15.01	3.200	5.660	6.480
61	77.0	15.25	3.120	5.530	6.340
62	78.8	15.49	3.050	5.410	6.200
63	80.6	15.73	2.990	5.290	6.060
64	82.3	15.96	2.920	5.180	5.930
65	84.2	16.19	2.860	5.060	5.800
66	86.2	16.44	2.790	4.950	5.670
67	88.2	16.68	2.730	4.840	5.550
68	90.2	16.92	2.670	4.730	5.420
69	92.1	17.14	2.620	4.630	5.310
70	94.2	17.38	2.560	4.530	5.190
71	96.4	17.63	2.500	4.430	5.070
72	98.6	17.87	2.440	4.330	4.960
73	100.9	18.11	2.390	4.240	4.850
74	103.1	18.33	2.340	4.150	4.750
75	105.4	18.57	2.290	4.060	4.650
76	107.9	18.82	2.240	3.960	4.540
77	110.4	19.06	2.190	3.880	4.440
78	112.9	19.29	2.140	3.790	4.340
79	115.3	19.52	2.100	3.710	4.250
80	117.9	19.76	2.050	3.630	4.160
81	120.7	20.01	2.000	3.550	4.060
82	123.5	20.24	1.960	3.470	3.970
83	126.3	20.48	1.910	3.390	3.890
84	129.0	20.71	1.870	3.320	3.810
85	132.0	20.94	1.830	3.250	3.720
86	135.1	21.19	1.790	3.170	3.640
87	138.2	21.43	1.750	3.100	3.560
88	141.3	21.67	1.710	3.040	3.480
89	144.4	21.89	1.680	2.970	3.410
90	147.6	22.13	1.640	2.910	3.330
91	151.2	22.38	1.600	2.840	3.250
92	154.6	22.62	1.570	2.780	3.180
93	158.1	22.86	1.530	2.720	3.110
94	161.5	23.08	1.500	2.660	3.050
95	165.2	23.32	1.470	2.600	2.980
96	169.1	23.57	1.430	2.540	2.910
97	173.0	23.81	1.400	2.490	2.850
98	176.9	24.05	1.370	2.430	2.790
99	180.7	24.27	1.340	2.380	2.730
100	184.9	24.51	1.310	2.330	2.670
101	189.3	24.76	1.280	2.270	2.610
102	193.6	25.00	1.260	2.220	2.550
103	198.0	25.23	1.230	2.180	2.490
104	202.2	25.46	1.200	2.130	2.440
105	206.8	25.70	1.180	2.080	2.390
106	211.8	25.95	1.150	2.030	2.330
107	216.6	26.18	1.120	1.990	2.280
108	221.5	26.42	1.100	1.950	2.230
109	226.3	26.65	1.080	1.910	2.180
110	231.4	26.88	1.050	1.860	2.140
111	236.9	27.13	1.030	1.820	2.090
112	242.3	27.37	1.010	1.780	2.040
113	247.8	27.61	0.980	1.740	2.000
114	253.2	27.84	0.960	1.710	1.950
115	258.9	28.07	0.940	1.670	1.910
116	265.1	28.32	0.920	1.630	1.870
117	271.2	28.56	0.900	1.590	1.830
118	277.3	28.80	0.880	1.560	1.790
119	283.3	29.02	0.860	1.530	1.750
120	289.7	29.26	0.840	1.490	1.710
121	296.6	29.51	0.820	1.460	1.670
122	303.4	29.75	0.800	1.430	1.630
123	310.3	29.98	0.790	1.390	1.600
124	317.0	30.21	0.770	1.370	1.560
125	324.2	30.45	0.750	1.340	1.530
126	331.9	30.70	0.740	1.300	1.500
127	339.5	30.93	0.720	1.280	1.460
128	347.2	31.17	0.700	1.250	1.430
129	354.7	31.40	0.690	1.220	1.400
130	362.7	31.64	0.670	1.190	1.370
131	371.4	31.89	0.660	1.170	1.340
132	379.8	32.12	0.640	1.140	1.310
133	388.4	32.36	0.630	1.120	1.280
134	396.8	32.59	0.620	1.090	1.250
135	405.9	32.82	0.600	1.070	1.230
136	415.5	33.07	0.590	1.040	1.200
137	425.0	33.31	0.580	1.020	1.170
138	434.7	33.55	0.560	1.000	1.150
139	444.0	33.77	0.550	0.980	1.120
140	454.1	34.01	0.540	0.960	1.100
141	465.0	34.26	0.530	0.930	1.070
142	475.5	34.50	0.520	0.910	1.050
143	486.4	34.74	0.500	0.890	1.020
144	496.8	34.96	0.490	0.880	1.000
145	508.1	35.20	0.480	0.860	0.980
146	520.3	35.45	0.470	0.840	0.960
147	532.1	35.69	0.460	0.820	0.940
148	544.2	35.92	0.450	0.800	0.920
149	555.9	36.15	0.440	0.780	0.900

Digital ZOOM (Continuous) : x1.50			
Pelco (SX1600) : Set Zoom Position (0x00,0x4F) Query Zoom Position (0x00,0x83)			ONVIF (SX1600) Zoom control *
CGI (SX1600) : SetAbsoluteZoomPosition GetAbsoluteZoomPosition		CGI (SX1600) : SetZoomControl GetZoomControl	
[DEC]	[HEX]	[DEC]	[DEC]
0	0	1	0.000
224	E0		0.003
448	1C0		0.007
661	295		0.010
885	375		0.014
1120	460	2	0.017
1344	540		0.021
1568	620		0.024
1781	6F5		0.027
2005	7D5		0.031
2241	8C1	3	0.034
2465	9A1		0.038
2689	A81		0.041
2901	B55		0.044
3126	C36		0.048
3361	D21	4	0.051
3585	E01		0.055
3809	EE1		0.058
4022	FB6		0.061
4246	1096		0.065
4481	1181	5	0.068
4705	1261		0.072
4929	1341		0.075
5142	1416		0.078
5366	14F6		0.082
5601	15E1	6	0.085
5825	16C1		0.089
6049	17A1		0.092
6262	1876		0.096
6486	1956		0.099
6722	1A42	7	0.103
6946	1B22		0.106
7170	1C02		0.109
7382	1CD6		0.113
7607	1DB7		0.116
7842	1EA2	8	0.120
8066	1F82		0.123
8290	2062		0.126
8503	2137		0.130
8727	2217		0.133
8962	2302	9	0.137
9186	23E2		0.140
9410	24C2		0.144
9623	2597		0.147
9847	2677		0.150
10082	2762	10	0.154
10306	2842		0.157
10530	2922		0.161
10743	29F7		0.164
10967	2AD7		0.167
11203	2BC3	11	0.171
11427	2CA3		0.174
11651	2D83		0.178
11864	2E58		0.181
12088	2F38		0.184
12323	3023	12	0.188
12547	3103		0.191
12771	31E3		0.195
12984	32B8		0.198
13208	3398		0.202
13443	3483	13	0.205
13667	3563		0.209
13891	3643		0.212
14104	3718		0.215
14328	37F8		0.219
14563	38E3	14	0.222
14787	39C3		0.226
15011	3AA3		0.229
15224	3B78		0.232
15448	3C58		0.236
15684	3D44	15	0.239
15908	3E24		0.243
16132	3F04		0.246
16345	3FD9		0.249
16569	40B9		0.253
16804	41A4	16	0.256
17028	4284		0.260
17252	4364		0.263
17465	4439		0.266
17689	4519		0.270
17924	4604	17	0.274
18148	46E4		0.277
18372	47C4		0.280
18585	4899		0.284
18809	4979		0.287
19044	4A64	18	0.291
19268	4B44		0.294
19492	4C24		0.297
19705	4CF9		0.301
19929	4DD9		0.304
20165	4EC5	19	0.308
20389	4FA5		0.311
20613	5085		0.315
20826	515A		0.318
21050	523A		0.321
21285	5325	20	0.325
21509	5405		0.328
21733	54E5		0.332
21946	55BA		0.335
22170	569A		0.338
22405	5785	21	0.342
22629	5865		0.345
22853	5945		0.349
23066	5A1A		0.352
23290	5AFA		0.355
23525	5BE5	22	0.359
23749	5CC5		0.362
23973	5DA5		0.366
24186	5E7A		0.369
24410	5F5A		0.372
24646	6046	23	0.376
24870	6126		0.379
25094	6206		0.383
25307	62DB		0.386
25531	63BB		0.390
25766	64A6	24	0.393
25990	6586		0.397
26214	6666		0.400
26427	673B		0.403
26651	681B		0.407
26886	6906	25	0.410
27110	69E6		0.414
27334	6AC6		0.417
27547	6B9B		0.420
27771	6C7B		0.424
28006	6D66	26	0.427
28230	6E46		0.431
28455	6F27		0.434
28667	6FFB		0.437
28891	70DB		0.441
29127	71C7	27	0.444
29351	72A7		0.448
29575	7387		0.451
29788	745C		0.455
30012	753C		0.458
30247	7627	28	0.462
30471	7707		0.465
30695	77E7		0.468
30908	78BC		0.472
31132	799C		0.475
31367	7A87	29	0.479
31591	7B67		0.482
31815	7C47		0.485
32028	7D1C		0.489
32252	7DFC		0.492
32487	7EE7	30	0.496
32711	7FC7		0.499
32936	80A8		0.503
33148	817C		0.506

Digital ZOOM (Continuous) : x1.75			
Pelco (SX1600) : Set Zoom Position (0x00,0x4F) Query Zoom Position (0x00,0x83)			ONVIF (SX1600) Zoom control *
CGI (SX1600) : SetAbsoluteZoomPosition GetAbsoluteZoomPosition		CGI (SX1600) : SetZoomControl GetZoomControl	
[DEC]	[HEX]	[DEC]	[DEC]
0	0	1	0.000
192	C0		0.003
384	180		0.006
567	237		0.009
759	2F7		0.012
960	3C0	2	0.015
1152	480		0.018
1344	540		0.021
1527	5F7		0.023
1719	6B7		0.026
1920	780	3	0.029
2113	841		0.032
2305	901		0.035
2487	9B7		0.038
2679	A77		0.041
2881	B41	4	0.044
3073	C01		0.047
3265	CC1		0.050
3447	D77		0.053
3639	E37		0.056
3841	F01	5	0.059
4033	FC1		0.062
4225	1081		0.064
4407	1137		0.067
4600	11F8		0.070
4801	12C1	6	0.073
4993	1381		0.076
5185	1441		0.079
5368	14F8		0.082
5560	15B8		0.085
5761	1681	7	0.088
5953	1741		0.091
6145	1801		0.094
6328	18B8		0.097
6520	1978		0.099
6722	1A42	8	0.103
6914	1B02		0.106
7106	1BC2		0.108
7288	1C78		0.111
7480	1D38		0.114
7682	1E02	9	0.117
7874	1EC2		0.120
8066	1F82		0.123
8248	2038		0.126
8440	20F8		0.129
8642	21C2	10	0.132
8834	2282		0.135
9026	2342		0.138
9209	23F9		0.141
9401	24B9		0.143
9602	2582	11	0.147
9794	2642		0.149
9986	2702		0.152
10169	27B9		0.155
10361	2879		0.158
10563	2943	12	0.161
10755	2A03		0.164
10947	2AC3		0.167
11129	2B79		0.170
11321	2C39		0.173
11523	2D03	13	0.176
11715	2DC3		0.179
11907	2E83		0.182
12089	2F39		0.184
12281	2FF9		0.187
12483	30C3	14	0.190
12675	3183		0.193
12867	3243		0.196
13050	32FA		0.199
13242	33BA		0.202
13443	3483	15	0.205
13635	3543		0.208
13827	3603		0.211
14010	36BA		0.214
14202	377A		0.217
14403	3843	16	0.220
14596	3904		0.223
14788	39C4		0.226
14970	3A7A		0.228
15162	3B3A		0.231
15364	3C04	17	0.234
15556	3CC4		0.237
15748	3D84		0.240
15930	3E3A		0.243
16122	3EFA		0.246
16324	3FC4	18	0.249
16516	4084		0.252
16708	4144		0.255
16890	41FA		0.258
17083	42BB		0.261
17284	4384	19	0.264
17476	4444		0.267
17668	4504		0.270
17851	45BB		0.272
18043	467B		0.275
18244	4744	20	0.278
18436	4804		0.281
18628	48C4		0.284
18811	497B		0.287
19003	4A3B		0.290
19205	4B05	21	0.293
19397	4BC5		0.296
19589	4C85		0.299
19771	4D3B		0.302
19963	4DFB		0.305
20165	4EC5	22	0.308
20357	4F85		0.311
20549	5045		0.314
20731	50FB		0.316
20923	51BB		0.319
21125	5285	23	0.322
21317	5345		0.325
21509	5405		0.328
21692	54BC		0.331
21884	557C		0.334
22085	5645	24	0.337
22277	5705		0.340
22469	57C5		0.343
22652	587C		0.346
22844	593C		0.349
23046	5A06	25	0.352
23238	5AC6		0.355
23430	5B86		0.358
23612	5C3C		0.360
23804	5CFC		0.363
24006	5DC6	26	0.366
24198	5E86		0.369
24390	5F46		0.372
24572	5FFC		0.375
24764	60BC		0.378
24966	6186	27	0.381
25158	6246		0.384
25350	6306		0.387
25533	63BD		0.390
25725	647D		0.393
25926	6546	28	0.396
26118	6606		0.399
26310	66C6		0.401
26493	677D		0.404
26685	683D		0.407
26886	6906	29	0.410
27079	69C7		0.413
27271	6A87		0.416
27453	6B3D		0.419
27645	6BFD		0.422
27847	6CC7	30	0.425
28039	6D87		0.428
28231	6E47		0.431
28413	6EFD		0.434

150	568.5	36.39	0.430	0.770	0.880
151	582.1	36.64	0.420	0.750	0.860
152	595.3	36.88	0.410	0.730	0.840
153	608.9	37.11	0.400	0.720	0.820
154	622.0	37.34	0.400	0.700	0.800
155	636.2	37.58	0.390	0.690	0.790
156	651.3	37.83	0.380	0.670	0.770
157	666.1	38.06	0.370	0.650	0.750
158	681.2	38.30	0.360	0.640	0.730
159	695.8	38.53	0.350	0.630	0.720
160	711.6	38.76	0.350	0.610	0.700
161	728.7	39.01	0.340	0.600	0.690
162	745.4	39.25	0.330	0.590	0.670
163	762.5	39.49	0.320	0.570	0.660
164	779.0	39.71	0.320	0.560	0.640
165	796.5	39.95	0.310	0.550	0.630
166	821.9	1.03	0.300	0.532	0.609
167	847.9	1.06	0.291	0.516	0.591
168	873.9	1.09	0.282	0.501	0.574
169	898.4	1.12	0.275	0.487	0.558
170	924.3	1.16	0.267	0.473	0.543
171	951.6	1.19	0.259	0.460	0.527
172	977.6	1.22	0.253	0.448	0.513
173	1,003.5	1.25	0.246	0.436	0.500
174	1,028.2	1.29	0.240	0.426	0.488
175	1,054.1	1.32	0.234	0.416	0.476
176	1,081.3	1.35	0.228	0.405	0.464
177	1,107.2	1.38	0.223	0.396	0.454
178	1,133.2	1.42	0.218	0.387	0.443
179	1,157.8	1.45	0.213	0.378	0.434
180	1,183.7	1.48	0.209	0.370	0.424
181	1,210.9	1.51	0.204	0.362	0.415
182	1,236.9	1.55	0.200	0.354	0.406
183	1,262.8	1.58	0.196	0.347	0.398
184	1,287.5	1.61	0.192	0.341	0.390
185	1,313.4	1.64	0.188	0.334	0.383
186	1,340.6	1.68	0.184	0.327	0.375
187	1,366.6	1.71	0.181	0.321	0.368
188	1,392.6	1.74	0.177	0.315	0.361
189	1,417.1	1.77	0.174	0.310	0.355
190	1,443.0	1.80	0.171	0.304	0.349
191	1,470.4	1.84	0.168	0.298	0.342
192	1,496.3	1.87	0.165	0.293	0.336
193	1,522.2	1.90	0.162	0.288	0.331
194	1,546.9	1.93	0.160	0.284	0.325
195	1,572.8	1.97	0.157	0.279	0.320
196	1,600.0	2.00	0.154	0.274	0.315
197	1,615.7	2.02	0.153	0.272	0.311
198	1,631.4	2.04	0.151	0.269	0.308
199	1,647.1	2.06	0.150	0.266	0.306
200	1,662.8	2.08	0.149	0.264	0.303
201	1,678.4	2.10	0.147	0.261	0.300
202	1,694.1	2.12	0.146	0.259	0.297
203	1,709.8	2.14	0.145	0.257	0.294
204	1,725.5	2.16	0.143	0.254	0.292
205	1,741.2	2.18	0.142	0.252	0.289
206	1,756.9	2.20	0.141	0.250	0.287
207	1,772.6	2.22	0.139	0.248	0.284
208	1,788.2	2.24	0.138	0.245	0.282
209	1,804.0	2.25	0.137	0.243	0.279
210	1,819.6	2.27	0.136	0.241	0.277
211	1,835.3	2.29	0.135	0.239	0.274
212	1,851.0	2.31	0.134	0.237	0.272
213	1,866.7	2.33	0.132	0.235	0.270
214	1,882.4	2.35	0.131	0.233	0.267
215	1,898.1	2.37	0.130	0.231	0.265
216	1,913.7	2.39	0.129	0.229	0.263
217	1,929.4	2.41	0.128	0.228	0.261
218	1,945.1	2.43	0.127	0.226	0.259
219	1,960.8	2.45	0.126	0.224	0.257
220	1,976.5	2.47	0.125	0.222	0.255
221	1,992.2	2.49	0.124	0.220	0.253
222	2,007.9	2.51	0.123	0.219	0.251
223	2023.5	2.53	0.122	0.217	0.249
224	2039.2	2.55	0.121	0.215	0.247
225	2054.9	2.57	0.120	0.214	0.245
226	2070.6	2.59	0.119	0.212	0.243
227	2086.3	2.61	0.118	0.210	0.241
228	2102.0	2.63	0.118	0.209	0.240
229	2117.7	2.65	0.117	0.207	0.238
230	2133.4	2.67	0.116	0.206	0.236
231	2149.0	2.69	0.115	0.204	0.234
232	2164.7	2.71	0.114	0.203	0.233
233	2180.4	2.73	0.113	0.201	0.231
234	2196.1	2.75	0.113	0.200	0.229
235	2211.8	2.76	0.112	0.199	0.228
236	2227.5	2.78	0.111	0.197	0.226
237	2243.2	2.80	0.110	0.196	0.225
238	2258.8	2.82	0.109	0.194	0.223
239	2274.5	2.84	0.109	0.193	0.221
240	2290.2	2.86	0.108	0.192	0.220
241	2305.9	2.88	0.107	0.190	0.218
242	2321.6	2.90	0.106	0.189	0.217
243	2337.3	2.92	0.106	0.188	0.216
244	2352.9	2.94	0.105	0.187	0.214
245	2368.7	2.96	0.104	0.185	0.213
246	2384.3	2.98	0.104	0.184	0.211
247	2400.0	3.00	0.103	0.183	0.210

33372	825C		0.509
33608	8348	31	0.513
33832	8428		0.516
34056	8508		0.520
34269	85DD		0.523
34493	86BD		0.526
34728	87A8	32	0.530
34952	8888		0.533
35176	8968		0.537
35389	8A3D		0.540
35613	8B1D		0.543
35848	8C08	33	0.547
36072	8CE8		0.550
36296	8DC8		0.554
36509	8E9D		0.557
36733	8F7D		0.561
36968	9068	34	0.564
37193	9149		0.568
37417	9229		0.571
37629	92FD		0.574
37853	93DD		0.578
38089	94C9	35	0.581
38313	95A9		0.585
38537	9689		0.588
38750	975E		0.591
38974	983E		0.595
39209	9929	36	0.598
39433	9A09		0.602
39657	9AE9		0.605
39870	9BBE		0.608
40094	9C9E		0.612
40329	9D89	37	0.615
40553	9E69		0.619
40777	9F49		0.622
40990	A01E		0.625
41214	A0FE		0.629
41449	A1E9	38	0.632
41674	A2CA		0.636
41898	A3AA		0.639
42110	A47E		0.643
42334	A55E		0.646
42570	A64A	39	0.650
42794	A72A		0.653
43018	A80A		0.656
43231	A8DF		0.660
43455	A9BF		0.663
43690	AAAA	40	0.667
44119	AC57		0.673
44547	AE03		0.680
44975	AFAF	41	0.686
45404	B15C		0.693
45832	B308	42	0.699
46260	B4B4		0.706
46689	B661		0.712
47117	B80D	43	0.719
47545	B9B9		0.725
47974	BB66	44	0.732
48402	BD12		0.739
48830	BEBE		0.745
49259	C06B	45	0.752
49687	C217		0.758
50115	C3C3	46	0.765
50544	C570		0.771
50972	C71C		0.778
51400	C8C8	47	0.784
51829	CA75		0.791
52257	CC21	48	0.797
52685	CDCD		0.804
53114	CF7A		0.810
53542	D126	49	0.817
53970	D2D2		0.824
54399	D47F	50	0.830
54827	D62B		0.837
55255	D7D7		0.843
55684	D984	51	0.850
56112	DB30		0.856
56540	DCDC	52	0.863
56969	DE89		0.869
57397	E035		0.876
57825	E1E1	53	0.882
58254	E38E		0.889
58682	E53A	54	0.895
59110	E6E6		0.902
59539	E893		0.909
59967	EA3F	55	0.915
60395	EBEB		0.922
60824	ED98	56	0.928
61252	EF44		0.935
61680	F0F0		0.941
62109	F29D	57	0.948
62537	F449		0.954
62965	F5F5	58	0.961
63394	F7A2		0.967
63822	F94E		0.974
64250	FAFA	59	0.980
64679	FCA7		0.987
65107	FE53		0.993
65535	FFFF	60	1.000

28605	6FBD		0.436
28807	7087	31	0.440
28999	7147		0.442
29191	7207		0.445
29373	72BD		0.448
29566	737E		0.451
29767	7447	32	0.454
29959	7507		0.457
30151	75C7		0.460
30334	767E		0.463
30526	773E		0.466
30727	7807	33	0.469
30919	78C7		0.472
31111	7987		0.475
31294	7A3E		0.478
31486	7AFE		0.480
31688	7BC8	34	0.484
31880	7C88		0.486
32072	7D48		0.489
32254	7DFE		0.492
32446	7EBE		0.495
32648	7F88	35	0.498
32840	8048		0.501
33032	8108		0.504
33214	81BE		0.507
33406	827E		0.510
33608	8348	36	0.513
33800	8408		0.516
33992	84C8		0.519
34175	857F		0.521
34367	863F		0.524
34568	8708	37	0.527
34760	87C8		0.530
34952	8888		0.533
35135	893F		0.536
35327	89FF		0.539
35529	8AC9	38	0.542
35721	8B89		0.545
35913	8C49		0.548
36095	8CFF		0.551
36287	8DBF		0.554
36489	8E89	39	0.557
36681	8F49		0.560
36873	9009		0.563
37055	90BF		0.565
37247	917F		0.568
37449	9249	40	0.571
37819	93BB		0.577
38189	952D		0.583
38558	969E	41	0.588
38928	9810		0.594
39297	9981	42	0.600
39667	9AF3		0.605
40036	9C64		0.611
40406	9DD6	43	0.617
40775	9F47		0.622
41145	A0B9	44	0.628
41515	A22B		0.633
41884	A39C		0.639
42254	A50E	45	0.645
42623	A67F		0.650
42993	A7F1	46	0.656
43362	A962		0.662
43732	AAD4		0.667
44101	AC45	47	0.673
44471	ADB7		0.679
44841	AF29	48	0.684
45211	B09B		0.690
45580	B20C		0.696
45949	B37D	49	0.701
46319	B4EF		0.707
46688	B660	50	0.712
47058	B7D2		0.718
47427	B943		0.724
47797	BAB5	51	0.729
48167	BC27		0.735
48536	BD98	52	0.741
48906	BF0A		0.746
49275	C07B		0.752
49645	C1ED	53	0.758
50014	C35E		0.763
50384	C4D0	54	0.769
50753	C641		0.774
51123	C7B3		0.780
51492	C924	55	0.786
51862	CA96		0.791
52232	CC08	56	0.797
52601	CD79		0.803
52971	CEEB		0.808
53340	D05C	57	0.814
53710	D1CE		0.820
54079	D33F	58	0.825
54449	D4B1		0.831
54818	D622		0.836
55188	D794	59	0.842
55558	D906		0.848
55927	DA77	60	0.853
56297	DBE9		0.859
56666	DD5A		0.865
57036	DECC	61	0.870
57405	E03D		0.876
57775	E1AF	62	0.882
58145	E321		0.887
58514	E492		0.893
58884	E604	63	0.899
59253	E775		0.904
59623	E8E7	64	0.910
59992	EA58		0.915
60362	EBCA		0.921
60731	ED3B	65	0.927
61101	EEAD		0.932
61470	F01E	66	0.938
61840	F190		0.944
62210	F302		0.949
62579	F473	67	0.955
62949	F5E5		0.961
63318	F756	68	0.966
63688	F8C8		0.972
64057	FA39		0.977
64427	FBAB	69	0.983
64796	FD1C		0.989
65166	FE8E		0.994
65535	FFFF	70	1.000

Lens			Field of View			Digital ZOOM (Continuous) : x2.00			
						Pelco (SX1600) : Set Zoom Position (0x00,0x4F) Query Zoom Position (0x00,0x83)			ONVIF (SX1600) Zoom control *
Motor Pulse	Focal Length		Vertical	Horizontal	Diagonal	CGI (SX1600) : SetAbsoluteZoomPosition GetAbsoluteZoomPosition		CGI (SX1600) : SetZoomControl GetZoomControl	
Steps	[mm]			[degree]		[DEC]	[HEX]	[DEC]	[DEC]
1	20.0	1.00	11.850	21.010	24.080	0	0	1	0.000
2	20.5	1.24	11.590	20.550	23.550	168	A8		0.003
3	20.9	1.48	11.340	20.090	23.030	336	150		0.005
4	21.4	1.70	11.100	19.660	22.530	496	1F0		0.008
5	21.9	1.94	10.850	19.220	22.030	664	298		0.010
6	22.4	2.19	10.600	18.770	21.510	840	348	2	0.013
7	22.9	2.43	10.360	18.360	21.030	1008	3F0		0.015
8	23.4	2.66	10.140	17.950	20.560	1176	498		0.018
9	23.9	2.89	9.920	17.570	20.130	1336	538		0.020
10	24.4	3.13	9.710	17.190	19.690	1504	5E0		0.023
11	25.0	3.38	9.480	16.790	19.230	1680	690	3	0.026
12	25.6	3.61	9.270	16.420	18.810	1848	738		0.028
13	26.2	3.85	9.070	16.050	18.390	2016	7E0		0.031
14	26.7	4.08	8.880	15.720	18.000	2176	880		0.033
15	27.4	4.31	8.680	15.370	17.610	2344	928		0.036
16	28.0	4.56	8.480	15.020	17.200	2521	9D9	4	0.038
17	28.7	4.80	8.300	14.690	16.820	2689	A81		0.041
18	29.3	5.04	8.120	14.360	16.450	2857	B29		0.044
19	29.9	5.26	7.950	14.060	16.100	3016	BC8		0.046
20	30.6	5.50	7.770	13.750	15.750	3184	C70		0.049
21	31.4	5.75	7.590	13.440	15.390	3361	D21	5	0.051
22	32.1	5.99	7.420	13.140	15.050	3529	DC9		0.054
23	32.8	6.23	7.260	12.850	14.720	3697	E71		0.056
24	33.5	6.45	7.110	12.580	14.410	3856	F10		0.059
25	34.3	6.69	6.950	12.310	14.090	4024	FB8		0.061
26	35.1	6.94	6.790	12.020	13.770	4201	1069	6	0.064
27	35.9	7.18	6.640	11.760	13.470	4369	1111		0.067
28	36.7	7.41	6.500	11.500	13.170	4537	11B9		0.069
29	37.5	7.64	6.360	11.260	12.900	4697	1259		0.072
30	38.4	7.88	6.220	11.010	12.610	4865	1301		0.074
31	39.3	8.13	6.080	10.760	12.320	5041	13B1	7	0.077
32	40.2	8.37	5.950	10.520	12.050	5209	1459		0.079
33	41.1	8.60	5.820	10.290	11.790	5377	1501		0.082
34	42.0	8.83	5.690	10.080	11.540	5537	15A1		0.084
35	42.9	9.07	5.570	9.860	11.290	5705	1649		0.087
36	43.9	9.32	5.440	9.630	11.030	5881	16F9	8	0.090
37	44.9	9.55	5.320	9.420	10.790	6049	17A1		0.092
38	45.9	9.79	5.200	9.210	10.550	6217	1849		0.095
39	46.9	10.02	5.090	9.020	10.330	6377	18E9		0.097
40	48.0	10.25	4.980	8.820	10.100	6545	1991		0.100
41	49.1	10.50	4.870	8.620	9.870	6721	1A41	9	0.103
42	50.3	10.74	4.760	8.430	9.660	6889	1AE9		0.105
43	51.4	10.98	4.660	8.240	9.440	7058	1B92		0.108
44	52.5	11.20	4.560	8.070	9.250	7217	1C31		0.110
45	53.7	11.44	4.460	7.890	9.040	7385	1CD9		0.113
46	55.0	11.69	4.360	7.710	8.840	7562	1D8A	10	0.115
47	56.2	11.93	4.260	7.540	8.640	7730	1E32		0.118
48	57.5	12.17	4.170	7.380	8.450	7898	1EDA		0.121
49	58.8	12.39	4.080	7.220	8.280	8057	1F79		0.123
50	60.1	12.63	3.990	7.070	8.090	8225	2021		0.126
51	61.5	12.88	3.900	6.900	7.910	8402	20D2	11	0.128
52	62.9	13.12	3.810	6.750	7.740	8570	217A		0.131
53	64.4	13.35	3.730	6.600	7.570	8738	2222		0.133
54	65.8	13.58	3.650	6.470	7.410	8898	22C2		0.136
55	67.2	13.82	3.570	6.320	7.250	9066	236A		0.138
56	68.8	14.07	3.490	6.180	7.080	9242	241A	12	0.141
57	70.4	14.30	3.410	6.040	6.920	9410	24C2		0.144
58	72.0	14.54	3.340	5.910	6.770	9578	256A		0.146
59	73.6	14.77	3.270	5.790	6.630	9738	260A		0.149
60	75.2	15.01	3.200	5.660	6.480	9906	26B2		0.151
61	77.0	15.26	3.120	5.530	6.340	10082	2762	13	0.154
62	78.8	15.49	3.050	5.410	6.200	10250	280A		0.156
63	80.6	15.73	2.990	5.290	6.060	10418	28B2		0.159
64	82.3	15.96	2.920	5.180	5.930	10578	2952		0.161
65	84.2	16.19	2.860	5.060	5.800	10746	29FA		0.164
66	86.2	16.44	2.790	4.950	5.670	10922	2AAA	14	0.167
67	88.2	16.68	2.730	4.840	5.550	11090	2B52		0.169
68	90.2	16.92	2.670	4.730	5.420	11258	2BFA		0.172
69	92.1	17.14	2.620	4.630	5.310	11418	2C9A		0.174
70	94.2	17.38	2.560	4.530	5.190	11586	2D42		0.177
71	96.4	17.63	2.500	4.430	5.070	11763	2DF3	15	0.179
72	98.6	17.87	2.440	4.330	4.960	11931	2E9B		0.182
73	100.9	18.11	2.390	4.240	4.850	12099	2F43		0.185
74	103.1	18.33	2.340	4.150	4.750	12258	2FE2		0.187
75	105.4	18.57	2.290	4.060	4.650	12426	308A		0.190
76	107.9	18.82	2.240	3.960	4.540	12603	313B	16	0.192
77	110.4	19.06	2.190	3.880	4.440	12771	31E3		0.195
78	112.9	19.29	2.140	3.790	4.340	12939	328B		0.197
79	115.3	19.52	2.100	3.710	4.250	13098	332A		0.200
80	117.9	19.76	2.050	3.630	4.160	13266	33D2		0.202
81	120.7	20.01	2.000	3.550	4.060	13443	3483	17	0.205
82	123.5	20.24	1.960	3.470	3.970	13611	352B		0.208
83	126.3	20.48	1.910	3.390	3.890	13779	35D3		0.210
84	129.0	20.71	1.870	3.320	3.810	13939	3673		0.213
85	132.0	20.95	1.830	3.250	3.720	14107	371B		0.215
86	135.1	21.19	1.790	3.170	3.640	14283	37CB	18	0.218
87	138.2	21.43	1.750	3.100	3.560	14451	3873		0.221
88	141.3	21.67	1.710	3.040	3.480	14619	391B		0.223
89	144.4	21.90	1.680	2.970	3.410	14779	39BB		0.226
90	147.6	22.13	1.640	2.910	3.330	14947	3A63		0.228
91	151.2	22.38	1.600	2.840	3.250	15123	3B13	19	0.231
92	154.6	22.62	1.570	2.780	3.180	15291	3BBB		0.233
93	158.1	22.86	1.530	2.720	3.110	15459	3C63		0.236
94	161.5	23.08	1.500	2.660	3.050	15619	3D03		0.238
95	165.2	23.32	1.470	2.600	2.980	15787	3DAB		0.241
96	169.1	23.57	1.430	2.540	2.910	15963	3E5B	20	0.244
97	173.0	23.81	1.400	2.490	2.850	16131	3F03		0.246
98	176.9	24.05	1.370	2.430	2.790	16299	3FAB		0.249
99	180.7	24.27	1.340	2.380	2.730	16459	404B		0.251
100	184.9	24.51	1.310	2.330	2.670	16627	40F3		0.254
101	189.3	24.76	1.280	2.270	2.610	16804	41A4	21	0.256
102	193.6	25.00	1.260	2.220	2.550	16972	424C		0.259
103	198.0	25.23	1.230	2.180	2.490	17140	42F4		0.262
104	202.2	25.46	1.200	2.130	2.440	17299	4393		0.264
105	206.8	25.70	1.180	2.080	2.390	17467	443B		0.267
106	211.8	25.95	1.150	2.030	2.330	17644	44EC	22	0.269
107	216.6	26.18	1.120	1.990	2.280	17812	4594		0.272
108	221.5	26.42	1.100	1.950	2.230	17980	463C		0.274
109	226.3	26.65	1.080	1.910	2.180	18139	46DB		0.277
110	231.4	26.89	1.050	1.860	2.140	18308	4784		0.279
111	236.9	27.13	1.030	1.820	2.090	18484	4834	23	0.282
112	242.3	27.37	1.010	1.780	2.040	18652	48DC		0.285
113	247.8	27.61	0.980	1.740	2.000	18820	4984		0.287
114	253.2	27.84	0.960	1.710	1.950	18980	4A24		0.290
115	258.9	28.07	0.940	1.670	1.910	19148	4ACC		0.292
116	265.1	28.32	0.920	1.630	1.870	19324	4B7C	24	0.295
117	271.2	28.56	0.900	1.590	1.830	19492	4C24		0.297
118	277.3	28.80	0.880	1.560	1.790	19660	4CCC		0.300
119	283.3	29.02	0.860	1.530	1.750	19820	4D6C		0.302
120	289.7	29.26	0.840	1.490	1.710	19988	4E14		0.305
121	296.6	29.51	0.820	1.460	1.670	20164	4EC4	25	0.308
122	303.4	29.75	0.800	1.430	1.630	20332	4F6C		0.310
123	310.3	29.99	0.790	1.390	1.600	20500	5014		0.313
124	317.0	30.21	0.770	1.370	1.560	20660	50B4		0.315
125	324.2	30.45	0.750	1.340	1.530	20828	515C		0.318
126	331.9	30.70	0.740	1.300	1.500	21004	520C	26	0.321
127	339.5	30.94	0.720	1.280	1.460	21173	52B5		0.323
128	347.2	31.17	0.700	1.250	1.430	21341	535D		0.326
129	354.7	31.40	0.690	1.220	1.400	21500	53FC		0.328
130	362.7	31.64	0.670	1.190	1.370	21668	54A4		0.331
131	371.4	31.89	0.660	1.170	1.340	21845	5555	27	0.333
132	379.8	32.12	0.640	1.140	1.310	22013	55FD		0.336
133	388.4	32.36	0.630	1.120	1.280	22181	56A5		0.338
134	396.8	32.59	0.620	1.090	1.250	22340	5744		0.341
135	405.9	32.82	0.600	1.070	1.230	22508	57EC		0.343
136	415.5	33.07	0.590	1.040	1.200	22685	589D	28	0.346
137	425.0	33.31	0.580	1.020	1.170	22853	5945		0.349
138	434.7	33.55	0.560	1.000	1.150	23021	59ED		0.351
139	444.0	33.78	0.550	0.980	1.120	23181	5A8D		0.354
140	454.1	34.01	0.540	0.960	1.100	23349	5B35		0.356
141	465.0	34.26	0.530	0.930	1.070	23525	5BE5	29	0.359
142	475.5	34.50	0.520	0.910	1.050	23693	5C8D		0.362
143	486.4	34.74	0.500	0.890	1.020	23861	5D35		0.364
144	496.8	34.96	0.490	0.880	1.000	24021	5DD5		0.367
145	508.1	35.20	0.480	0.860	0.980	24189	5E7D		0.369
146	520.3	35.45	0.470	0.840	0.960	24365	5F2D	30	0.372
147	532.1	35.69	0.460	0.820	0.940	24533	5FD5		0.374
148	544.2	35.93	0.450	0.800	0.920	24701	607D		0.377
149	555.9	36.15	0.440	0.780	0.900	24861	611D		0.379

150	568.5	36.39	0.430	0.770	0.880
151	582.1	36.64	0.420	0.750	0.860
152	595.3	36.88	0.410	0.730	0.840
153	608.9	37.11	0.400	0.720	0.820
154	622.0	37.34	0.400	0.700	0.800
155	636.2	37.58	0.390	0.690	0.790
156	651.3	37.83	0.380	0.670	0.770
157	666.1	38.06	0.370	0.650	0.750
158	681.2	38.30	0.360	0.640	0.730
159	695.8	38.53	0.350	0.630	0.720
160	711.6	38.76	0.350	0.610	0.700
161	728.7	39.01	0.340	0.600	0.690
162	745.4	39.25	0.330	0.590	0.670
163	762.5	39.49	0.320	0.570	0.660
164	779.0	39.71	0.320	0.560	0.640
165	796.5	39.95	0.310	0.550	0.630
166	822.1	1.03	0.300	0.532	0.609
167	848.0	1.06	0.291	0.516	0.591
168	873.9	1.09	0.282	0.500	0.574
169	898.6	1.12	0.275	0.487	0.558
170	924.5	1.16	0.267	0.473	0.542
171	951.7	1.19	0.259	0.460	0.527
172	977.6	1.22	0.253	0.448	0.513
173	1,003.6	1.25	0.246	0.436	0.500
174	1,028.2	1.29	0.240	0.426	0.488
175	1,054.2	1.32	0.234	0.415	0.476
176	1,081.3	1.35	0.228	0.405	0.464
177	1,107.3	1.38	0.223	0.396	0.454
178	1,133.2	1.42	0.218	0.387	0.443
179	1,157.9	1.45	0.213	0.378	0.434
180	1,183.8	1.48	0.209	0.370	0.424
181	1,211.0	1.51	0.204	0.362	0.415
182	1,236.9	1.55	0.200	0.354	0.406
183	1,263.0	1.58	0.196	0.347	0.398
184	1,287.5	1.61	0.192	0.341	0.390
185	1,313.4	1.64	0.188	0.334	0.383
186	1,340.7	1.68	0.184	0.327	0.375
187	1,366.7	1.71	0.181	0.321	0.368
188	1,392.6	1.74	0.177	0.315	0.361
189	1,417.1	1.77	0.174	0.310	0.355
190	1,443.1	1.80	0.171	0.304	0.349
191	1,470.4	1.84	0.168	0.298	0.342
192	1,496.3	1.87	0.165	0.293	0.336
193	1,522.2	1.90	0.162	0.288	0.331
194	1,546.9	1.93	0.160	0.284	0.325
195	1,572.8	1.97	0.157	0.279	0.320
196	1,600.0	2.00	0.154	0.274	0.315
197	1,615.9	2.02	0.153	0.272	0.311
198	1,631.7	2.04	0.151	0.269	0.308
199	1,647.6	2.06	0.150	0.266	0.305
200	1,663.4	2.08	0.149	0.264	0.303
201	1,679.3	2.10	0.147	0.261	0.300
202	1,695.1	2.12	0.146	0.259	0.297
203	1,710.9	2.14	0.144	0.257	0.294
204	1,726.8	2.16	0.143	0.254	0.292
205	1,742.6	2.18	0.142	0.252	0.289
206	1,758.5	2.20	0.141	0.250	0.286
207	1,774.3	2.22	0.139	0.247	0.284
208	1,790.1	2.24	0.138	0.245	0.281
209	1,806.0	2.26	0.137	0.243	0.279
210	1,821.8	2.28	0.136	0.241	0.276
211	1,837.7	2.30	0.134	0.239	0.274
212	1,853.5	2.32	0.133	0.237	0.272
213	1,869.3	2.34	0.132	0.235	0.269
214	1,885.2	2.36	0.131	0.233	0.267
215	1,901.0	2.38	0.130	0.231	0.265
216	1,916.9	2.40	0.129	0.229	0.263
217	1,932.7	2.42	0.128	0.227	0.261
218	1,948.5	2.44	0.127	0.225	0.258
219	1,964.4	2.46	0.126	0.224	0.256
220	1,980.2	2.48	0.125	0.222	0.254
221	1,996.0	2.50	0.124	0.220	0.252
222	2,011.9	2.51	0.123	0.218	0.250
223	2027.7	2.53	0.122	0.217	0.248
224	2043.6	2.55	0.121	0.215	0.246
225	2059.4	2.57	0.120	0.213	0.245
226	2075.3	2.59	0.119	0.212	0.243
227	2091.1	2.61	0.118	0.210	0.241
228	2106.9	2.63	0.117	0.208	0.239
229	2122.8	2.65	0.116	0.207	0.237
230	2138.6	2.67	0.116	0.205	0.236
231	2154.5	2.69	0.115	0.204	0.234
232	2170.3	2.71	0.114	0.202	0.232
233	2186.2	2.73	0.113	0.201	0.230
234	2202.0	2.75	0.112	0.199	0.229
235	2217.8	2.77	0.111	0.198	0.227
236	2233.7	2.79	0.111	0.197	0.226
237	2249.5	2.81	0.110	0.195	0.224
238	2265.4	2.83	0.109	0.194	0.222
239	2281.2	2.85	0.108	0.193	0.221
240	2297.1	2.87	0.108	0.191	0.219
241	2312.9	2.89	0.107	0.190	0.218
242	2328.8	2.91	0.106	0.189	0.216
243	2344.6	2.93	0.105	0.187	0.215
244	2360.4	2.95	0.105	0.186	0.213
245	2376.3	2.97	0.104	0.185	0.212
246	2392.1	2.99	0.103	0.184	0.211
247	2408.0	3.01	0.103	0.182	0.209
248	2423.8	3.03	0.102	0.181	0.208
249	2439.7	3.05	0.101	0.180	0.207
250	2455.5	3.07	0.101	0.179	0.205
251	2471.3	3.09	0.100	0.178	0.204
252	2487.2	3.11	0.099	0.177	0.203
253	2503.0	3.13	0.099	0.175	0.201
254	2518.9	3.15	0.098	0.174	0.200
255	2534.7	3.17	0.098	0.173	0.199
256	2550.5	3.19	0.097	0.172	0.198
257	2566.4	3.21	0.096	0.171	0.196
258	2582.2	3.23	0.096	0.170	0.195
259	2598.1	3.25	0.095	0.169	0.194
260	2613.9	3.27	0.095	0.168	0.193
261	2629.7	3.29	0.094	0.167	0.192
262	2645.6	3.31	0.093	0.166	0.190
263	2661.4	3.33	0.093	0.165	0.189
264	2677.3	3.35	0.092	0.164	0.188
265	2693.1	3.37	0.092	0.163	0.187
266	2708.9	3.39	0.091	0.162	0.186
267	2724.8	3.41	0.091	0.161	0.185
268	2740.6	3.43	0.090	0.160	0.184
269	2756.5	3.45	0.090	0.159	0.183
270	2772.3	3.47	0.089	0.158	0.182
271	2788.1	3.49	0.089	0.158	0.181
272	2804.0	3.51	0.088	0.157	0.180
273	2819.8	3.52	0.088	0.156	0.179
274	2835.6	3.54	0.087	0.155	0.178
275	2851.5	3.56	0.087	0.154	0.177
276	2867.3	3.58	0.086	0.153	0.176
277	2883.2	3.60	0.086	0.152	0.175
278	2899.0	3.62	0.085	0.152	0.174
279	2914.9	3.64	0.085	0.151	0.173
280	2930.7	3.66	0.084	0.150	0.172
281	2946.6	3.68	0.084	0.149	0.171
282	2962.4	3.70	0.083	0.148	0.170
283	2978.2	3.72	0.083	0.148	0.169
284	2994.1	3.74	0.083	0.147	0.168
285	3009.9	3.76	0.082	0.146	0.167
286	3025.8	3.78	0.082	0.145	0.167
287	3041.6	3.80	0.081	0.144	0.166
288	3057.5	3.82	0.081	0.144	0.165
289	3073.3	3.84	0.080	0.143	0.164
290	3089.1	3.86	0.080	0.142	0.163
291	3105.0	3.88	0.080	0.141	0.162
292	3120.8	3.90	0.079	0.141	0.162
293	3136.7	3.92	0.079	0.140	0.161
294	3152.5	3.94	0.078	0.139	0.160
295	3168.4	3.96	0.078	0.139	0.159
296	3184.2	3.98	0.078	0.138	0.158
297	3200.0	4.00	0.077	0.137	0.158

25029	61C5		0.382
25205	6275	31	0.385
25373	631D		0.387
25541	63C5		0.390
25701	6465		0.392
25869	650D		0.395
26046	65BE	32	0.397
26214	6666		0.400
26382	670E		0.403
26541	67AD		0.405
26709	6855		0.408
26886	6906	33	0.410
27054	69AE		0.413
27222	6A56		0.415
27381	6AF5		0.418
27549	6B9D		0.420
27726	6C4E	34	0.423
27894	6CF6		0.426
28062	6D9E		0.428
28222	6E3E		0.431
28390	6EE6		0.433
28566	6F96	35	0.436
28734	703E		0.438
28902	70E6		0.441
29062	7186		0.443
29230	722E		0.446
29406	72DE	36	0.449
29574	7386		0.451
29742	742E		0.454
29902	74CE		0.456
30070	7576		0.459
30246	7626	37	0.462
30414	76CE		0.464
30583	7777		0.467
30742	7816		0.469
30910	78BE		0.472
31087	796F	38	0.474
31255	7A17		0.477
31423	7ABF		0.479
31582	7B5E		0.482
31750	7C06		0.484
31927	7CB7	39	0.487
32095	7D5F		0.490
32263	7E07		0.492
32423	7EA7		0.495
32591	7F4F		0.497
32767	7FFF	40	0.500
33092	8144		0.505
33416	8288		0.510
33741	83CD	41	0.515
34065	8511		0.520
34390	8656	42	0.525
34714	879A		0.530
35039	88DF		0.535
35363	8A23	43	0.540
35687	8B67		0.545
36012	8CAC	44	0.550
36336	8DF0		0.554
36661	8F35		0.559
36985	9079	45	0.564
37310	91BE		0.569
37634	9302	46	0.574
37958	9446		0.579
38283	958B		0.584
38607	96CF	47	0.589
38932	9814		0.594
39256	9958	48	0.599
39581	9A9D		0.604
39905	9BE1		0.609
40230	9D26	49	0.614
40554	9E6A		0.619
40878	9FAE	50	0.624
41203	A0F3		0.629
41527	A237		0.634
41852	A37C	51	0.639
42176	A4C0		0.644
42501	A605	52	0.649
42825	A749		0.653
43149	A88D		0.658
43474	A9D2	53	0.663
43798	AB16		0.668
44123	AC5B	54	0.673
44447	AD9F		0.678
44772	AEE4		0.683
45096	B028	55	0.688
45420	B16C		0.693
45745	B2B1	56	0.698
46069	B3F5		0.703
46394	B53A		0.708
46718	B67E	57	0.713
47043	B7C3		0.718
47367	B907	58	0.723
47692	BA4C		0.728
48016	BB90		0.733
48340	BCD4	59	0.738
48665	BE19		0.743
48989	BF5D	60	0.748
49314	C0A2		0.752
49638	C1E6		0.757
49963	C32B	61	0.762
50287	C46F		0.767
50611	C5B3	62	0.772
50936	C6F8		0.777
51260	C83C		0.782
51585	C981	63	0.787
51909	CAC5		0.792
52234	CC0A	64	0.797
52558	CD4E		0.802
52883	CE93		0.807
53207	CFD7	65	0.812
53531	D11B		0.817
53856	D260	66	0.822
54180	D3A4		0.827
54505	D4E9		0.832
54829	D62D	67	0.837
55154	D772		0.842
55478	D8B6	68	0.847
55802	D9FA		0.851
56127	DB3F		0.856
56451	DC83	69	0.861
56776	DDC8		0.866
57100	DF0C	70	0.871
57425	E051		0.876
57749	E195		0.881
58073	E2D9	71	0.886
58398	E41E		0.891
58722	E562	72	0.896
59047	E6A7		0.901
59371	E7EB		0.906
59696	E930	73	0.911
60020	EA74		0.916
60345	EBB9	74	0.921
60669	ECFD		0.926
60993	EE41		0.931
61318	EF86	75	0.936
61642	F0CA		0.941
61967	F20F	76	0.946
62291	F353		0.950
62616	F498		0.955
62940	F5DC	77	0.960
63264	F720		0.965
63589	F865	78	0.970
63913	F9A9		0.975
64238	FAEE		0.980
64562	FC32	79	0.985
64887	FD77		0.990
65211	FEBB		0.995
65535	FFFF	80	1.000

		Digital Zoom:OFF								Digital ZOOM (Continuous) : x1.25												
Focal Leng	mm	20	35.1	61.5	107.9	189.3	331.9	582.1	1081.3	1600	20	40.4	81.5	164.4	331.9	669.8896	1405.522	1794.86	2000	20	46.45219	107.93
Zoom Pos	HEX	0000	20D2	41A4	6276	8348	A41A	C4EC	E5BD	FFFF	0000	20D2	41A4	6276	8348	A41A	C4EC	E5BD	FFFF	0000	20D2	41A4
Control Re	Pulse	14	35	108	330	1004	3061	6852	9585	9585	14	57	189	913	3061	8647	9585	9585	9585	14	62	330
		Focus Position [HEX]									Focus Position [HEX]											
	10	966B	988C	9112	7A60	5558	32BA				966B	96E3	87D1	58A8	32BA					966B	9664	7A5F
	12	97A4	9ABE	9657	85C9	692C	4DD4				97A4	9A04	8FF0	6BCA	4DD4					97A4	99B1	85C9
	14	980C	9C32	9A2D	8E07	7775	617E	1D69			980C	9C7E	958E	798F	617E					980C	9C4A	8E07
	17	98DD	9DFD	9E4D	96B6	86BD	768B	46B4			98DD	9ED4	9BA0	8842	768B	05C2				98DD	9EE5	96B6
	20	9945	9F16	A0F4	9CCF	9179	856A	5C6D	2A53	2A53	9945	A075	9FF0	9298	856A	3B6F	2A53	2A53	2A53	9945	A08E	9CCF
	24	9A16	A02E	A39B	A2B3	9BAE	9398	712A	4616	4616	9A16	A224	A3FF	9C66	9398	54D0	4616	4616	4616	9A16	A27D	A2B3
	28	9A7E	A0E6	A5A7	A6C2	A312	9DD1	8020	5A21	5A21	9A7E	A31F	A6D3	A384	9DD1	671D	5A21	5A21	5A21	9A7E	A382	A6C2
	33		A1A3	A769	AA92	A9BB	A720	8DD7	6C83	6C83		A449	A95E	A9EC	A720	77EC	6C83	6C83	6C83		A4CB	AA92
	40	9AE6	A25A	A8E9	AE5A	B045	B053	9B60	7EAE	7EAE	9AE6	A545	ABE9	B034	B053	8884	7EAE	7EAE	7EAE	9AE6	A5C9	AE5A
	47	9B4F	A2B6	AA18	B0DF	B4EF	B6CE	A4F2	8B89	8B89	9B4F	A5EC	ADB6	B4AF	B6CE	943E	8B89	8B89	8B89	9B4F	A675	B0DF
	56		A317	AB3E	B338	B928	BCC3	ADC2	976C	976C		A66F	AF7A	B8BF	BCC3	9F19	976C	976C	976C		A71A	B338
	67		A373	AC23	B555	BCD9	C1EC	B561	A1AA	A1AA		A717	B0BF	BC4D	C1EC	A871	A1AA	A1AA	A1AA		A7BE	B555
	79	9BB7	A3CE	AD00	B6D5	BFAB	C5E8	BB46	A9A0	A9A0	9BB7	A79A	B1CF	BF06	C5E8	AFB0	A9A0	A9A0	A9A0	9BB7	A863	B6D5
	94		A42A	AD9C	B84C	C229	C96E	C08E	B0BE	B0BE		A7EE	B2CC	C169	C96E	B62F	B0BE	B0BE	B0BE		A8BD	B84C
	110		A430	AE2F	B95B	C420	CC32	C499	B633	B633		A841	B392	C34C	CC32	BB2A	B633	B633	B633		A90F	B95B
	130		A486	AE79	BA69	C5DA	CEA8	C843	BB29	BB29		A895	B451	C4EE	CEA8	BFAF	BB29	BB29	BB29		A961	BA69
	160		A48B	AF0C	BB6D	C7B3	D135	CC0F	C048	C048		A8C5	B50E	C6BA	D135	C45A	C048	C048	C048		A9B3	BB6E
	190		A4E2	AF5E	BC13	C8EF	D2F7	CEA7	C3CC	C3CC		A8E9	B58D	C7E7	D2F7	C78D	C3CC	C3CC	C3CC		A9BB	BC13
	220		A4E7	AFA8	BC85	C9D0	D438	D08D	C65B	C65B		A918	B5D6	C8BD	D438	C9E1	C65B	C65B	C65B		AA06	BC85
	270			AFB0	BD2B	CAE6	D5B5	D2C2	C95C	C95C		A93D	B61E	C9CA	D5B5	CCA0	C95C	C95C	C95C		AA0D	BD2B
ect Distanc	320			AFF1	BD93	CBA2	D6C2	D44B	CB71	CB71		A96C	B693	CA80	D6C2	CE82	CB71	CB71	CB71		AA58	BD93
	380			B03B	BDFC	CC40	D7A0	D597	CD35	CD35			B6D3	CB17	D7A0	D01D	CD35	CD35	CD35		AA5F	BDFC
	450			B043	BE39	CCC0	D85E	D6B1	CEAC	CEAC			B6DC	CB96	D85E	D174	CEAC	CEAC	CEAC			BE39
	530				BE6D	CD21	D8EF	D791	CFE0	CFE0			B71B	CBF6	D8EF	D289	CFE0	CFE0	CFE0			BE6D
	630			B084	BEA2	CD81	D97D	D85E	D0F4	D0F4			B724	CC4C	D97D	D387	D0F4	D0F4	D0F4			BEA2
	750			B08D	BED6	CDDC	D9F3	D90A	D1DA	D1DA			B75B	CCA2	D9F2	D458	D1DA	D1DA	D1DA			BED6
	890				BF0A	CE1F	DA4D	D996	D29D	D29D			B764	CCE2	DA4C	D50A	D29D	D29D	D29D			BF0A
	1100				BF13	CE5C	DAB0	DA2A	D35F	D35F			B799	CD22	DAB0	D5BC	D35F	D35F	D35F			BF13
	1300				BF3E	CE98	DAEB	DA86	D3E2	D3E2			B7A2	CD59	DAEB	D633	D3E2	D3E2	D3E2			BF3F
	1500				BF47	CEB6	DB22	DACC	D441	D441				CD79	DB22	D687	D441	D441	D441			BF47
	1800				BF73	CEDB	DB50	DB19	D4A4	D4A4				CD99	DB50	D6E7	D4A4	D4A4	D4A4			BF73
	2100				BF7C	CEF9	DB79	DB51	D4F1	D4F1				CDAF	DB79	D727	D4F1	D4F1	D4F1			BF7C
	2500					CF00	DB98	DB82	D535	D535				CDB9	DB98	D767	D535	D535	D535			
	3000					CF18	DBB7	DBAF	D574	D574				CDD8	DBB7	D79E	D574	D574	D574			
	3500					CF36	DBD3	DBCF	D59D	D59D				CDEF	DBD3	D7C5	D59D	D59D	D59D			
	4200					CF3D	DBE1	DBF3	D5CA	D5CA					DBE1	D7ED	D5CA	D5CA	D5CA			
	5000						DBF3	DC09	D5EE	D5EE				CDF8	DBF3	D80F	D5EE	D5EE	D5EE			
	6000					CF54	DC00	DC1F	D60E	D60E				CE0F	DC00	D829	D60E	D60E	D60E			
	7100					CF5B	DC0E	DC32	D625	D625					DC0E	D841	D625	D625	D625			
	8400						DC1C	DC42	D637	D637					DC1C	D850	D637	D637	D637			
	Inf	9C20	A543	B0D7	BFB0	CF79	DC49	DC8F	D6A3	D6A3	9C20	A9C0	B7E2	CE2F	DC49	D8B3	D6A3	D6A3	D6A3	9C20	AAB2	BFB0

Digital ZOOM (Continuous) : x1.5						Digital ZOOM (Continuous) : x1.75									Digital ZOOM (Continuous) : x2.0								
250.6175	582.11	1405.525	1846.165	2153.829	2400	20	53.45281	142.9285	381.9411	1081.43	1794.911	2153.877	2512.806	2800	20	61.5	189.3	582.1779	1641.314	2051.306	2461.59	2871.75	3200
6276	8348	A41A	C4EC	E5BD	FFFF	0000	20D2	41A4	6276	8348	A41A	C4EC	E5BD	FFFF	0000	20D2	41A4	6276	8348	A41A	C4EC	E5BD	FFFF
2107	6852	9585	9585	9585	9585	14	98	575	4857	9585	9585	9585	9585	9585	14	108	1003	6851	9585	9585	9585	9585	9585
Focus Position [HEX]						Focus Position [HEX]									Focus Position [HEX]								
42AE						966B	9220	68C2	27D5						966B	9112	555A						
5A8C						97A4	970D	785E	4514						97A4	9657	692D						
6BBA	1D65					980C	9AA1	8388	5A4A						980C	9A2D	7776	1D78					
7E2C	46B3					98DD	9E62	8F7E	710D						98DD	9E4D	86BE	46B9					
8B29	5C6C	2A53	2A53	2A53	2A53	9945	A0E7	97D0	8137	2A53	2A53	2A53	2A53	2A53	9945	A0F4	9179	5C71	2A53	2A53	2A53	2A53	2A53
9788	7129	4616	4616	4616	4616	9A16	A36C	9FCF	9099	4616	4616	4616	4616	4616	9A16	A39B	9BAF	712D	4616	4616	4616	4616	4616
A063	8020	5A21	5A21	5A21	5A21	9A7E	A53E	A578	9BAA	5A21	5A21	5A21	5A21	5A21	9A7E	A5A7	A313	8023	5A21	5A21	5A21	5A21	5A21
A88D	8DD6	6C83	6C83	6C83	6C83		A6E2	AA9F	A5D4	6C83	6C83	6C83	6C83	6C83		A769	A9BB	8DD9	6C83	6C83	6C83	6C83	6C83
B07C	9B60	7EAE	7EAE	7EAE	7EAE	9AE6	A859	AFC4	AFD2	7EAE	7EAE	7EAE	7EAE	7EAE	9AE6	A8E9	B045	9B63	7EAE	7EAE	7EAE	7EAE	7EAE
B621	A4F1	8B89	8B89	8B89	8B89	9B4F	A967	B349	B6DF	8B89	8B89	8B89	8B89	8B89	9B4F	AA18	B4EF	A4F4	8B89	8B89	8B89	8B89	8B89
BB4D	ADC2	976C	976C	976C	976C		AA76	B69D	BD65	976C	976C	976C	976C	976C		AB3E	B928	ADC4	976C	976C	976C	976C	976C
BFC3	B561	A1AA	A1AA	A1AA	A1AA		AB57	B96E	C2FE	A1AA	A1AA	A1AA	A1AA	A1AA		AC23	BCD9	B563	A1AA	A1AA	A1AA	A1AA	A1AA
C337	BB45	A9A0	A9A0	A9A0	A9A0	9BB7	AC1A	BB9A	C759	A9A0	A9A0	A9A0	A9A0	A9A0	9BB7	AD00	BFAB	BB47	A9A0	A9A0	A9A0	A9A0	A9A0
C64E	C08E	B0BE	B0BE	B0BE	B0BE		ACB0	BD96	CB37	B0BE	B0BE	B0BE	B0BE	B0BE		AD9C	C228	C08F	B0BE	B0BE	B0BE	B0BE	B0BE
C8A3	C499	B633	B633	B633	B633		AD28	BF17	CE32	B633	B633	B633	B633	B633		AE2F	C420	C49B	B633	B633	B633	B633	B633
CAC9	C842	BB29	BB29	BB29	BB29		AD91	C06F	D0E3	BB29	BB29	BB29	BB29	BB29		AE78	C5DA	C844	BB29	BB29	BB29	BB29	BB29
CD03	CC0F	C048	C048	C048	C048		AE09	C1C6	D3AE	C048	C048	C048	C048	C048		AF0C	C7B3	CC10	C048	C048	C048	C048	C048
CE7C	CEA7	C3CC	C3CC	C3CC	C3CC		AE55	C2C4	D598	C3CC	C3CC	C3CC	C3CC	C3CC		AF5E	C8EF	CEA8	C3CC	C3CC	C3CC	C3CC	C3CC
CF9C	D08C	C65B	C65B	C65B	C65B		AE81	C370	D6FB	C65B	C65B	C65B	C65B	C65B		AFA7	C9CF	D08D	C65B	C65B	C65B	C65B	C65B
D0E6	D2C2	C95C	C95C	C95C	C95C		AEA0	C445	D89D	C95C	C95C	C95C	C95C	C95C		AFB0	CAE6	D2C3	C95C	C95C	C95C	C95C	C95C
D1D1	D44B	CB71	CB71	CB71	CB71		AEEB	C4C8	D9BE	CB71	CB71	CB71	CB71	CB71		AFF1	CBA2	D44C	CB71	CB71	CB71	CB71	CB71
D289	D597	CD35	CD35	CD35	CD35		AF17	C543	DAB3	CD35	CD35	CD35	CD35	CD35		B03B	CC40	D598	CD35	CD35	CD35	CD35	CD35
D335	D6B1	CEAC	CEAC	CEAC	CEAC		AF36	C5BE	DB7B	CEAC	CEAC	CEAC	CEAC	CEAC		B043	CCBF	D6B1	CEAC	CEAC	CEAC	CEAC	CEAC
D3B8	D791	CFE0	CFE0	CFE0	CFE0			C610	DC27	CFE0	CFE0	CFE0	CFE0	CFE0			CD20	D792	CFE0	CFE0	CFE0	CFE0	CFE0
D426	D85E	D0F4	D0F4	D0F4	D0F4		AF63	C641	DCB8	D0F4	D0F4	D0F4	D0F4	D0F4		B084	CD81	D85F	D0F4	D0F4	D0F4	D0F4	D0F4
D494	D909	D1DA	D1DA	D1DA	D1DA			C693	DD38	D1DA	D1DA	D1DA	D1DA	D1DA		B08D	CDDB	D90A	D1DA	D1DA	D1DA	D1DA	D1DA
D4D8	D996	D29D	D29D	D29D	D29D			C6C4	DDA3	D29D	D29D	D29D	D29D	D29D			CE1F	D996	D29D	D29D	D29D	D29D	D29D
D532	DA29	D35F	D35F	D35F	D35F			C6ED	DE10	D35F	D35F	D35F	D35F	D35F			CE5B	DA2A	D35F	D35F	D35F	D35F	D35F
D570	DA86	D3E2	D3E2	D3E2	D3E2			C716	DE50	D3E2	D3E2	D3E2	D3E2	D3E2			CE98	DA87	D3E2	D3E2	D3E2	D3E2	D3E2
D59A	DACC	D441	D441	D441	D441			C73F	DE86	D441	D441	D441	D441	D441			CEB6	DACD	D441	D441	D441	D441	D441
D5CA	DB19	D4A4	D4A4	D4A4	D4A4			C747	DEBD	D4A4	D4A4	D4A4	D4A4	D4A4			CEDB	DB1A	D4A4	D4A4	D4A4	D4A4	D4A4
D5DE	DB50	D4F1	D4F1	D4F1	D4F1			C768	DEE2	D4F1	D4F1	D4F1	D4F1	D4F1			CEF9	DB51	D4F1	D4F1	D4F1	D4F1	D4F1
D5F8	DB82	D535	D535	D535	D535			C770	DF0D	D535	D535	D535	D535	D535			CEFF	DB83	D535	D535	D535	D535	D535
D61D	DBAF	D574	D574	D574	D574			C791	DF29	D574	D574	D574	D574	D574			CF17	DBAF	D574	D574	D574	D574	D574
D622	DBCF	D59D	D59D	D59D	D59D				DF43	D59D	D59D	D59D	D59D	D59D			CF35	DBD0	D59D	D59D	D59D	D59D	D59D
D637	DBF3	D5CA	D5CA	D5CA	D5CA			C799	DF59	D5CA	D5CA	D5CA	D5CA	D5CA			CF3C	DBF4	D5CA	D5CA	D5CA	D5CA	D5CA
D64C	DC09	D5EE	D5EE	D5EE	D5EE				DF71	D5EE	D5EE	D5EE	D5EE	D5EE				DC09	D5EE	D5EE	D5EE	D5EE	D5EE
D661	DC1F	D60E	D60E	D60E	D60E				DF7C	D60E	D60E	D60E	D60E	D60E			CF54	DC20	D60E	D60E	D60E	D60E	D60E
	DC32	D625	D625	D625	D625				DF8D	D625	D625	D625	D625	D625			CF5A	DC33	D625	D625	D625	D625	D625
D666	DC42	D637	D637	D637	D637				DF97	D637	D637	D637	D637	D637				DC43	D637	D637	D637	D637	D637
D690	DC8F	D6A3	D6A3	D6A3	D6A3	9C20	AFAE	C7C2	DFCD	D6A3	D6A3	D6A3	D6A3	D6A3	9C20	B0D6	CF78	DC90	D6A3	D6A3	D6A3	D6A3	D6A3

Appendix 1. Table of ZOOM Position vs Focal length for SX1600 FW Ver.1.0

Digital ZOOM : OFF

Lens			Field of View			Pelco (SX1600) : Set Zoom Position (0x00,0x4F) Query Zoom Position (0x00,0x83)			ONVIF (SX1600) Zoom control
Motor Pulse	Focal Length		Vertical	Horizontal	Diagonal	CGI (SX1600) : SetAbsoluteZoomPosition GetAbsoluteZoomPosition		CGI (SX1600) : SetZoomControl GetZoomControl	
Steps	[mm]		[degree]			[DEC]	[HEX]	[DEC]	[DEC]
1	20.0	1.00	11.850	21.010	24.080	0	0	1	0.000
2	20.5	1.24	11.590	20.550	23.550	336	150		0.005
3	20.9	1.48	11.340	20.090	23.030	672	2A0		0.010
4	21.4	1.70	11.100	19.660	22.530	991	3DF		0.015
5	21.9	1.94	10.850	19.220	22.030	1328	530		0.020
6	22.4	2.19	10.600	18.770	21.510	1680	690	2	0.026
7	22.9	2.43	10.360	18.360	21.030	2016	7E0		0.031
8	23.4	2.66	10.140	17.950	20.560	2353	931		0.036
9	23.9	2.89	9.920	17.570	20.130	2672	A70		0.041
10	24.4	3.13	9.710	17.190	19.690	3008	BC0		0.046
11	25.0	3.38	9.480	16.790	19.230	3361	D21	3	0.051
12	25.6	3.61	9.270	16.420	18.810	3697	E71		0.056
13	26.2	3.85	9.070	16.050	18.390	4033	FC1		0.062
14	26.7	4.08	8.880	15.720	18.000	4352	1100		0.066
15	27.4	4.31	8.680	15.370	17.610	4688	1250		0.072
16	28.0	4.56	8.480	15.020	17.200	5041	13B1	4	0.077
17	28.7	4.80	8.300	14.690	16.820	5377	1501		0.082
18	29.3	5.04	8.120	14.360	16.450	5713	1651		0.087
19	29.9	5.26	7.950	14.060	16.100	6033	1791		0.092
20	30.6	5.50	7.770	13.750	15.750	6369	18E1		0.097
21	31.4	5.75	7.590	13.440	15.390	6722	1A42	5	0.103
22	32.1	5.99	7.420	13.140	15.050	7058	1B92		0.108
23	32.8	6.23	7.260	12.850	14.720	7394	1CE2		0.113
24	33.5	6.45	7.110	12.580	14.410	7713	1E21		0.118
25	34.3	6.69	6.950	12.310	14.090	8049	1F71		0.123
26	35.1	6.94	6.790	12.020	13.770	8402	20D2	6	0.128
27	35.9	7.18	6.640	11.760	13.470	8738	2222		0.133
28	36.7	7.41	6.500	11.500	13.170	9074	2372		0.138
29	37.5	7.64	6.360	11.260	12.900	9393	24B1		0.143
30	38.4	7.88	6.220	11.010	12.610	9729	2601		0.148
31	39.3	8.13	6.080	10.760	12.320	10082	2762	7	0.154
32	40.2	8.36	5.950	10.520	12.050	10418	28B2		0.159
33	41.1	8.60	5.820	10.290	11.790	10754	2A02		0.164
34	42.0	8.83	5.690	10.080	11.540	11074	2B42		0.169
35	42.9	9.07	5.570	9.860	11.290	11410	2C92		0.174
36	43.9	9.32	5.440	9.630	11.030	11763	2DF3	8	0.179
37	44.9	9.55	5.320	9.420	10.790	12099	2F43		0.185
38	45.9	9.79	5.200	9.210	10.550	12435	3093		0.190
39	46.9	10.02	5.090	9.020	10.330	12754	31D2		0.195
40	48.0	10.25	4.980	8.820	10.100	13090	3322		0.200
41	49.1	10.50	4.870	8.620	9.870	13443	3483	9	0.205
42	50.3	10.74	4.760	8.430	9.660	13779	35D3		0.210
43	51.4	10.98	4.660	8.240	9.440	14115	3723		0.215
44	52.5	11.20	4.560	8.070	9.250	14435	3863		0.220
45	53.7	11.44	4.460	7.890	9.040	14771	39B3		0.225
46	55.0	11.69	4.360	7.710	8.840	15123	3B13	10	0.231
47	56.2	11.93	4.260	7.540	8.640	15460	3C64		0.236
48	57.5	12.17	4.170	7.380	8.450	15796	3DB4		0.241
49	58.8	12.39	4.080	7.220	8.280	16115	3EF3		0.246
50	60.1	12.63	3.990	7.070	8.090	16451	4043		0.251
51	61.5	12.88	3.900	6.900	7.910	16804	41A4	11	0.256
52	62.9	13.12	3.810	6.750	7.740	17140	42F4		0.262
53	64.4	13.35	3.730	6.600	7.570	17476	4444		0.267
54	65.8	13.58	3.650	6.470	7.410	17795	4583		0.272
55	67.2	13.82	3.570	6.320	7.250	18131	46D3		0.277
56	68.8	14.07	3.490	6.180	7.080	18484	4834	12	0.282
57	70.4	14.30	3.410	6.040	6.920	18820	4984		0.287
58	72.0	14.54	3.340	5.910	6.770	19156	4AD4		0.292
59	73.6	14.77	3.270	5.790	6.630	19476	4C14		0.297
60	75.2	15.01	3.200	5.660	6.480	19812	4D64		0.302
61	77.0	15.26	3.120	5.530	6.340	20165	4EC5	13	0.308
62	78.8	15.49	3.050	5.410	6.200	20501	5015		0.313
63	80.6	15.73	2.990	5.290	6.060	20837	5165		0.318
64	82.3	15.96	2.920	5.180	5.930	21156	52A4		0.323
65	84.2	16.19	2.860	5.060	5.800	21492	53F4		0.328
66	86.2	16.44	2.790	4.950	5.670	21845	5555	14	0.333
67	88.2	16.68	2.730	4.840	5.550	22181	56A5		0.338
68	90.2	16.92	2.670	4.730	5.420	22517	57F5		0.344
69	92.1	17.14	2.620	4.630	5.310	22836	5934		0.348
70	94.2	17.38	2.560	4.530	5.190	23173	5A85		0.354
71	96.4	17.63	2.500	4.430	5.070	23525	5BE5	15	0.359
72	98.6	17.87	2.440	4.330	4.960	23861	5D35		0.364
73	100.9	18.11	2.390	4.240	4.850	24198	5E86		0.369
74	103.1	18.33	2.340	4.150	4.750	24517	5FC5		0.374
75	105.4	18.57	2.290	4.060	4.650	24853	6115		0.379
76	107.9	18.82	2.240	3.960	4.540	25206	6276	16	0.385
77	110.4	19.06	2.190	3.880	4.440	25542	63C6		0.390
78	112.9	19.29	2.140	3.790	4.340	25878	6516		0.395
79	115.3	19.52	2.100	3.710	4.250	26197	6655		0.400
80	117.9	19.76	2.050	3.630	4.160	26533	67A5		0.405
81	120.7	20.01	2.000	3.550	4.060	26886	6906	17	0.410
82	123.5	20.24	1.960	3.470	3.970	27222	6A56		0.415
83	126.3	20.48	1.910	3.390	3.890	27558	6BA6		0.421
84	129.0	20.71	1.870	3.320	3.810	27878	6CE6		0.425
85	132.0	20.95	1.830	3.250	3.720	28214	6E36		0.431
86	135.1	21.19	1.790	3.170	3.640	28567	6F97	18	0.436
87	138.2	21.43	1.750	3.100	3.560	28903	70E7		0.441
88	141.3	21.67	1.710	3.040	3.480	29239	7237		0.446
89	144.4	21.90	1.680	2.970	3.410	29558	7376		0.451
90	147.6	22.13	1.640	2.910	3.330	29894	74C6		0.456
91	151.2	22.38	1.600	2.840	3.250	30247	7627	19	0.462
92	154.6	22.62	1.570	2.780	3.180	30583	7777		0.467
93	158.1	22.86	1.530	2.720	3.110	30919	78C7		0.472
94	161.5	23.08	1.500	2.660	3.050	31238	7A06		0.477
95	165.2	23.32	1.470	2.600	2.980	31574	7B56		0.482
96	169.1	23.57	1.430	2.540	2.910	31927	7CB7	20	0.487
97	173.0	23.81	1.400	2.490	2.850	32263	7E07		0.492
98	176.9	24.05	1.370	2.430	2.790	32599	7F57		0.497
99	180.7	24.27	1.340	2.380	2.730	32919	8097		0.502
100	184.9	24.51	1.310	2.330	2.670	33255	81E7		0.507
101	189.3	24.76	1.280	2.270	2.610	33608	8348	21	0.513
102	193.6	25.00	1.260	2.220	2.550	33944	8498		0.518
103	198.0	25.23	1.230	2.180	2.490	34280	85E8		0.523
104	202.2	25.46	1.200	2.130	2.440	34599	8727		0.528
105	206.8	25.70	1.180	2.080	2.390	34935	8877		0.533
106	211.8	25.95	1.150	2.030	2.330	35288	89D8	22	0.538
107	216.6	26.18	1.120	1.990	2.280	35624	8B28		0.544
108	221.5	26.42	1.100	1.950	2.230	35960	8C78		0.549
109	226.3	26.65	1.080	1.910	2.180	36280	8DB8		0.554
110	231.4	26.89	1.050	1.860	2.140	36616	8F08		0.559
111	236.9	27.13	1.030	1.820	2.090	36968	9068	23	0.564
112	242.3	27.37	1.010	1.780	2.040	37305	91B9		0.569
113	247.8	27.61	0.980	1.740	2.000	37641	9309		0.574
114	253.2	27.84	0.960	1.710	1.950	37960	9448		0.579
115	258.9	28.07	0.940	1.670	1.910	38296	9598		0.584
116	265.1	28.32	0.920	1.630	1.870	38649	96F9	24	0.590
117	271.2	28.56	0.900	1.590	1.830	38985	9849		0.595
118	277.3	28.80	0.880	1.560	1.790	39321	9999		0.600
119	283.3	29.02	0.860	1.530	1.750	39640	9AD8		0.605
120	289.7	29.26	0.840	1.490	1.710	39976	9C28		0.610
121	296.6	29.51	0.820	1.460	1.670	40329	9D89	25	0.615
122	303.4	29.75	0.800	1.430	1.630	40665	9ED9		0.621
123	310.3	29.98	0.790	1.390	1.600	41001	A029		0.626
124	317.0	30.21	0.770	1.370	1.560	41321	A169		0.631
125	324.2	30.45	0.750	1.340	1.530	41657	A2B9		0.636
126	331.9	30.70	0.740	1.300	1.500	42010	A41A	26	0.641
127	339.5	30.94	0.720	1.280	1.460	42346	A56A		0.646
128	347.2	31.17	0.700	1.250	1.430	42682	A6BA		0.651
129	354.7	31.40	0.690	1.220	1.400	43001	A7F9		0.656
130	362.7	31.64	0.670	1.190	1.370	43337	A949		0.661
131	371.4	31.89	0.660	1.170	1.340	43690	AAAA	27	0.667
132	379.8	32.12	0.640	1.140	1.310	44026	ABFA		0.672
133	388.4	32.36	0.630	1.120	1.280	44362	AD4A		0.677
134	396.8	32.59	0.620	1.090	1.250	44681	AE89		0.682
135	405.9	32.82	0.600	1.070	1.230	45018	AFDA		0.687
136	415.5	33.07	0.590	1.040	1.200	45370	B13A	28	0.692
137	425.0	33.31	0.580	1.020	1.170	45706	B28A		0.697
138	434.7	33.55	0.560	1.000	1.150	46043	B3DB		0.703
139	444.0	33.77	0.550	0.980	1.120	46362	B51A		0.707
140	454.1	34.01	0.540	0.960	1.100	46698	B66A		0.713
141	465.0	34.26	0.530	0.930	1.070	47051	B7CB	29	0.718
142	475.5	34.50	0.520	0.910	1.050	47387	B91B		0.723
143	486.4	34.74	0.500	0.890	1.020	47723	BA6B		0.728
144	496.8	34.96	0.490	0.880	1.000	48042	BBAA		0.733
145	508.1	35.20	0.480	0.860	0.980	48378	BCFA		0.738
146	520.3	35.45	0.470	0.840	0.960	48731	BE5B	30	0.744
147	532.1	35.69	0.460	0.820	0.940	49067	BFAB		0.749
148	544.2	35.92	0.450	0.800	0.920	49403	C0FB		0.754
149	555.9	36.15	0.440	0.780	0.900	49723	C23B		0.759
150	568.5	36.39	0.430	0.770	0.880	50059	C38B		0.764
151	582.1	36.64	0.420	0.750	0.860	50412	C4EC	31	0.769
152	595.3	36.88	0.410	0.730	0.840	50748	C63C		0.774
153	608.9	37.11	0.400	0.720	0.820	51084	C78C		0.779
154	622.0	37.34	0.400	0.700	0.800	51403	C8CB		0.784
155	636.2	37.58	0.390	0.690	0.790	51739	CA1B		0.789
156	651.3	37.83	0.380	0.670	0.770	52092	CB7C	32	0.795
157	666.1	38.06	0.370	0.650	0.750	52428	CCCC		0.800
158	681.2	38.30	0.360	0.640	0.730	52764	CE1C		0.805
159	695.8	38.53	0.350	0.630	0.720	53083	CF5B		0.810
160	711.6	38.76	0.350	0.610	0.700	53419	D0AB		0.815
161	728.7	39.01	0.340	0.600	0.690	53772	D20C	33	0.821
162	745.4	39.25	0.330	0.590	0.670	54108	D35C		0.826
163	762.5	39.49	0.320	0.570	0.660	54444	D4AC		0.831
164	779.0	39.71	0.320	0.560	0.640	54764	D5EC		0.836
165	796.5	39.95	0.310	0.550	0.630	55100	D73C		0.841
166	822.1	1.03	0.300	0.532	0.609	55453	D89D	34	0.846
167	848.0	1.06	0.291	0.516	0.591	55789	D9ED		0.851
168	873.9	1.09	0.282	0.500	0.574	56125	DB3D		0.856
169	898.6	1.12	0.275	0.487	0.558	56444	DC7C		0.861
170	924.5	1.16	0.267	0.473	0.542	56780	DDCC		0.866
171	951.7	1.19	0.259	0.460	0.527	57133	DF2D	35	0.872
172	977.6	1.22	0.253	0.448	0.513	57469	E07D		0.877
173	1,003.6	1.25	0.246	0.436	0.500	57805	E1CD		0.882
174	1,028.2	1.29	0.240	0.426	0.488	58125	E30D		0.887
175	1,054.2	1.32	0.234	0.415	0.476	58461	E45D		0.892
176	1,081.3	1.35	0.228	0.405	0.464	58813	E5BD	36	0.897
177	1,107.3	1.38	0.223	0.396	0.454	59150	E70E		0.903
178	1,133.2	1.42	0.218	0.387	0.443	59486	E85E		0.908
179	1,157.9	1.45	0.213	0.378	0.434	59805	E99D		0.913
180	1,183.8	1.48	0.209	0.370	0.424	60141	EAED		0.918
181	1,211.0	1.51	0.204	0.362	0.415	60494	EC4E	37	0.923
182	1,236.9	1.55	0.200	0.354	0.406	60830	ED9E		0.928
183	1,263.0	1.58	0.196	0.347	0.398	61166	EEEE		0.933
184	1,287.5	1.61	0.192	0.341	0.390	61485	F02D		0.938
185	1,313.4	1.64	0.188	0.334	0.383	61821	F17D		0.943
186	1,340.7	1.68	0.184	0.327	0.375	62174	F2DE	38	0.949
187	1,366.7	1.71	0.181	0.321	0.368	62510	F42E		0.954
188	1,392.6	1.74	0.177	0.315	0.361	62846	F57E		0.959

Digital ZOOM(Extended) : x1.25

Lens			Field of View			Pelco (SX1600) : Set Zoom Position (0x00,0x4F) Query Zoom Position (0x00,0x83)			ONVIF (SX1600) Zoom control
Motor Pulse	Focal Length		Vertical	Horizontal	Diagonal	CGI (SX1600) : SetAbsoluteZoomPosition GetAbsoluteZoomPosition		CGI (SX1600) : SetZoomControl GetZoomControl	
Steps	[mm]		[degree]			[DEC]	[HEX]	[DEC]	[DEC]
1	25.0	1.00	9.480	16.830	19.290	0	0	1	0.000
2	25.6	1.24	9.280	16.460	18.870	336	150		0.005
3	26.2	1.48	9.070	16.100	18.450	672	2A0		0.010
4	26.7	1.70	8.880	15.760	18.060	991	3DF		0.015
5	27.3	1.94	8.690	15.400	17.660	1328	530		0.020
6	28.0	2.19	8.480	15.050	17.240	1680	690	2	0.026
7	28.6	2.43	8.300	14.710	16.860	2016	7E0		0.031
8	29.3	2.66	8.110	14.390	16.490	2353	931		0.036
9	29.9	2.89	7.950	14.090	16.140	2672	A70		0.041
10	30.6	3.13	7.770	13.780	15.790	3008	BC0		0.046
11	31.3	3.38	7.590	13.460	15.420	3361	D21	3	0.051
12	32.0	3.61	7.420	13.160	15.080	3697	E71		0.056
13	32.7	3.85	7.260	12.870	14.750	4033	FC1		0.062
14	33.4	4.08	7.110	12.600	14.440	4352	1100		0.066
15	34.2	4.31	6.950	12.320	14.120	4688	1250		0.072
16	35.0	4.56	6.790	12.040	13.800	5041	13B1	4	0.077
17	35.8	4.80	6.640	11.780	13.490	5377	1501		0.082
18	36.6	5.04	6.500	11.520	13.200	5713	1651		0.087
19	37.4	5.26	6.360	11.280	12.920	6033	1791		0.092
20	38.3	5.50	6.220	11.030	12.640	6369	18E1		0.097
21	39.2	5.75	6.080	10.770	12.340	6722	1A42	5	0.103
22	40.1	5.99	5.940	10.540	12.070	7058	1B92		0.108
23	41.0	6.23	5.810	10.300	11.810	7394	1CE2		0.113
24	41.9	6.45	5.690	10.090	11.560	7713	1E21		0.118
25	42.9	6.69	5.570	9.870	11.310	8049	1F71		0.123
26	43.9	6.94	5.440	9.640	11.050	8402	20D2	6	0.128
27	44.9	7.18	5.320	9.430	10.800	8738	2222		0.133
28	45.9	7.41	5.200	9.220	10.570	9074	2372		0.138
29	46.9	7.64	5.090	9.030	10.350	9393	24B1		0.143
30	47.9	7.88	4.980	8.830	10.120	9729	2601		0.148
31	49.1	8.13	4.870	8.630	9.890	10082	2762	7	0.154
32	50.2	8.36	4.760	8.440	9.670	10418	28B2		0.159
33	51.4	8.60	4.660	8.250	9.460	10754	2A02		0.164
34	52.5	8.83	4.560	8.080	9.260	11074	2B42		0.169
35	53.7	9.07	4.460	7.900	9.060	11410	2C92		0.174
36	54.9	9.32	4.360	7.720	8.850	11763	2DF3	8	0.179
37	56.2	9.55	4.260	7.550	8.650	12099	2F43		0.185
38	57.4	9.79	4.170	7.380	8.460	12435	3093		0.190
39	58.7	10.02	4.080	7.230	8.290	12754	31D2		0.195
40	60.0	10.25	3.990	7.070	8.100	13090	3322		0.200
41	61.4	10.50	3.900	6.910	7.920	13443	3483	9	0.205
42	62.8	10.74	3.810	6.760	7.740	13779	35D3		0.210
43	64.2	10.98	3.730	6.610	7.570	14115	3723		0.215
44	65.6	11.20	3.650	6.470	7.420	14435	3863		0.220
45	67.1	11.44	3.570	6.330	7.250	14771	39B3		0.225
46	68.7	11.69	3.490	6.180	7.090	15123	3B13	10	0.231
47	70.3	11.93	3.410	6.050	6.930	15460	3C64		0.236
48	71.9	12.17	3.340	5.910	6.780	15796	3DB4		0.241
49	73.4	12.39	3.270	5.790	6.640	16115	3EF3		0.246
50	75.1	12.63	3.190	5.660	6.490	16451	4043		0.251
51	76.9	12.88	3.120	5.530	6.340	16804	41A4	11	0.256
52	78.7	13.12	3.050	5.410	6.200	17140	42F4		0.262
53	80.5	13.35	2.990	5.290	6.070	17476	4444		0.267
54	82.2	13.58	2.920	5.180	5.940	17795	4583		0.272
55	84.0	13.82	2.860	5.070	5.810	18131	46D3		0.277
56	86.0	14.07	2.790	4.950	5.680	18484	4834	12	0.282
57	88.0	14.30	2.730	4.840	5.550	18820	4984		0.287
58	90.0	14.54	2.670	4.740	5.430	19156	4AD4		0.292
59	92.0	14.77	2.620	4.640	5.320	19476	4C14		0.297
60	94.1	15.01	2.560	4.540	5.200	19812	4D64		0.302
61	96.3	15.26	2.500	4.430	5.080	20165	4EC5	13	0.308
62	98.5	15.49	2.440	4.330	4.970	20501	5015		0.313
63	100.7	15.73	2.390	4.240	4.860	20837	5165		0.318
64	102.9	15.96	2.340	4.150	4.760	21156	52A4		0.323
65	105.2	16.19	2.290	4.060	4.650	21492	53F4		0.328
66	107.7	16.44	2.240	3.970	4.550	21845	5555	14	0.333
67	110.2	16.68	2.190	3.880	4.450	22181	56A5		0.338
68	112.7	16.92	2.140	3.790	4.350	22517	57F5		0.344
69	115.1	17.14	2.090	3.710	4.260	22836	5934		0.348
70	117.7	17.38	2.050	3.630	4.160	23173	5A85		0.354
71	120.5	17.63	2.000	3.550	4.070	23525	5BE5	15	0.359
72	123.3	17.87	1.960	3.470	3.980	23861	5D35		0.364
73	126.1	18.11	1.910	3.390	3.890	24198	5E86		0.369
74	128.8	18.33	1.870	3.320	3.810	24517	5FC5		0.374
75	131.8	18.57	1.830	3.250	3.730	24853	6115		0.379
76	134.9	18.82	1.790	3.180	3.640	25206	6276	16	0.385
77	138.0	19.06	1.750	3.110	3.560	25542	63C6		0.390
78	141.1	19.29	1.710	3.040	3.480	25878	6516		0.395
79	144.1	19.52	1.680	2.970	3.410	26197	6655		0.400
80	147.4	19.76	1.640	2.910	3.330	26533	67A5		0.405
81	150.9	20.01	1.600	2.840	3.260	26886	6906	17	0.410
82	154.3	20.24	1.570	2.780	3.190	27222	6A56		0.415
83	157.9	20.48	1.530	2.720	3.120	27558	6BA6		0.421
84	161.3	20.71	1.500	2.660	3.050	27878	6CE6		0.425
85	165.0	20.95	1.470	2.600	2.980	28214	6E36		0.431
86	168.9	21.19	1.430	2.540	2.910	28567	6F97	18	0.436
87	172.7	21.43	1.400	2.490	2.850	28903	70E7		0.441
88	176.7	21.67	1.370	2.430	2.790	29239	7237		0.446
89	180.5	21.90	1.340	2.380	2.730	29558	7376		0.451
90	184.6	22.13	1.310	2.330	2.670	29894	74C6		0.456
91	189.0	22.38	1.280	2.280	2.610	30247	7627	19	0.462
92	193.3	22.62	1.250	2.230	2.550	30583	7777		0.467
93	197.6	22.86	1.230	2.180	2.500	30919	78C7		0.472
94	201.9	23.08	1.200	2.130	2.440	31238	7A06		0.477
95	206.5	23.32	1.180	2.080	2.390	31574	7B56		0.482
96	211.4	23.57	1.150	2.040	2.330	31927	7CB7	20	0.487
97	216.2	23.81	1.120	1.990	2.280	32263	7E07		0.492
98	221.1	24.05	1.100	1.950	2.230	32599	7F57		0.497
99	225.9	24.27	1.080	1.910	2.190	32919	8097		0.502
100	231.1	24.51	1.050	1.870	2.140	33255	81E7		0.507
101	236.6	24.76	1.030	1.820	2.090	33608	8348	21	0.513
102	242.0	25.00	1.000	1.780	2.040	33944	8498		0.518
103	247.5	25.23	0.980	1.740	2.000	34280	85E8		0.523
104	252.8	25.46	0.960	1.710	1.960	34599	8727		0.528
105	258.5	25.70	0.940	1.670	1.910	34935	8877		0.533
106	264.7	25.95	0.920	1.630	1.870	35288	89D8	22	0.538
107	270.7	26.18	0.900	1.590	1.830	35624	8B28		0.544
108	276.9	26.42	0.880	1.560	1.790	35960	8C78		0.549
109	282.9	26.65	0.860	1.530	1.750	36280	8DB8		0.554
110	289.3	26.89	0.840	1.490	1.710	36616	8F08		0.559
111	296.2	27.13	0.820	1.460	1.670	36968	9068	23	0.564
112	302.9	27.37	0.800	1.430	1.640	37305	91B9		0.569
113	309.8	27.61	0.790	1.400	1.600	37641	9309		0.574
114	316.5	27.84	0.770	1.370	1.570	37960	9448		0.579
115	323.7	28.07	0.750	1.340	1.530	38296	9598		0.584
116	331.4	28.32	0.740	1.310	1.500	38649	96F9	24	0.590
117	339.0	28.56	0.720	1.280	1.460	38985	9849		0.595
118	346.7	28.80	0.700	1.250	1.430	39321	9999		0.600
119	354.1	29.02	0.690	1.220	1.400	39640	9AD8		0.605
120	362.2	29.26	0.670	1.200	1.370	39976	9C28		0.610
121	370.8	29.51	0.660	1.170	1.340	40329	9D89	25	0.615
122	379.2	29.75	0.640	1.140	1.310	40665	9ED9		0.621
123	387.8	29.98	0.630	1.120	1.280	41001	A029		0.626
124	396.2	30.21	0.620	1.090	1.250	41321	A169		0.631
125	405.2	30.45	0.600	1.070	1.230	41657	A2B9		0.636
126	414.9	30.70	0.590	1.050	1.200	42010	A41A	26	0.641
127	424.4	30.94	0.580	1.020	1.170	42346	A56A		0.646
128	434.0	31.17	0.560	1.000	1.150	42682	A6BA		0.651
129	443.3	31.40	0.550	0.980	1.120	43001	A7F9		0.656
130	453.4	31.64	0.540	0.960	1.100	43337	A949		0.661
131	464.2	31.89	0.530	0.940	1.070	43690	AAAA	27	0.667
132	474.8	32.12	0.520	0.910	1.050	44026	ABFA		0.672
133	485.5	32.36	0.500	0.890	1.030	44362	AD4A		0.677
134	496.0	32.59	0.490	0.880	1.000	44681	AE89		0.682
135	507.3	32.82	0.480	0.860	0.980	45018	AFDA		0.687
136	519.4	33.07	0.470	0.840	0.960	45370	B13A	28	0.692
137	531.2	33.31	0.460	0.820	0.940	45706	B28A		0.697
138	543.3	33.55	0.450	0.800	0.920	46043	B3DB		0.703
139	555.1	33.77	0.440	0.780	0.900	46362	B51A		0.707
140	567.7	34.01	0.430	0.770	0.880	46698	B66A		0.713
141	581.2	34.26	0.420	0.750	0.860	47051	B7CB	29	0.718
142	594.4	34.50	0.410	0.730	0.840	47387	B91B		0.723
143	607.9	34.74	0.400	0.720	0.820	47723	BA6B		0.728
144	621.0	34.96	0.400	0.700	0.800	48042	BBAA		0.733
145	635.2	35.20	0.390	0.690	0.790	48378	BCFA		0.738
146	650.3	35.45	0.380	0.670	0.770	48731	BE5B	30	0.744
147	665.1	35.69	0.370	0.660	0.750	49067	BFAB		0.749
148	680.2	35.92	0.360	0.640	0.730	49403	C0FB		0.754
149	694.9	36.15	0.350	0.630	0.720	49723	C23B		0.759
150	710.7	36.39	0.350	0.610	0.700	50059	C38B		0.764
151	727.6	36.64	0.340	0.600	0.690	50412	C4EC	31	0.769
152	744.2	36.88	0.330	0.590	0.670	50748	C63C		0.774
153	761.1	37.11	0.320	0.570	0.660	51084	C78C		0.779
154	777.5	37.34	0.320	0.560	0.640	51403	C8CB		0.784
155	795.2	37.58	0.310	0.550	0.630	51739	CA1B		0.789
156	814.2	37.83	0.300	0.540	0.620	52092	CB7C	32	0.795
157	832.6	38.06	0.300	0.520	0.600	52428	CCCC		0.800
158	851.5	38.30	0.290	0.510	0.590	52764	CE1C		0.805
159	869.8	38.53	0.280	0.500	0.580	53083	CF5B		0.810
160	889.5	38.76	0.280	0.490	0.560	53419	D0AB		0.815
161	910.9	39.01	0.270	0.480	0.550	53772	D20C	33	0.821
162	931.8	39.25	0.260	0.470	0.540	54108	D35C		0.826
163	953.1	39.49	0.260	0.460	0.530	54444	D4AC		0.831
164	973.8	39.71	0.250	0.450	0.520	54764	D5EC		0.836
165	995.6	39.95	0.250	0.440	0.500	55100	D73C		0.841
166	1,027.6	1.03	0.240	0.426	0.488	55453	D89D	34	0.846
167	1,060.0	1.06	0.233	0.413	0.474	55789	D9ED		0.851
168	1,092.4	1.09	0.226	0.401	0.460	56125	DB3D		0.856
169	1,123.3	1.12	0.220	0.390	0.447	56444	DC7C		0.861
170	1,155.7	1.16	0.214	0.379	0.435	56780	DDCC		0.866
171	1,189.6	1.19	0.208	0.368	0.422	57133	DF2D	35	0.872
172	1,222.0	1.22	0.202	0.359	0.411	57469	E07D		0.877
173	1,254.4	1.25	0.197	0.350	0.401	57805	E1CD		0.882
174	1,285.3	1.29	0.192	0.341	0.391	58125	E30D		0.887
175	1,317.7	1.32	0.187	0.333	0.382	58461	E45D		0.892
176	1,351.7	1.35	0.183	0.324	0.372	58813	E5BD	36	0.897
177	1,384.1	1.38	0.179	0.317	0.363	59150	E70E		0.903
178	1,416.5	1.42	0.174	0.310	0.355	59486	E85E		0.908
179	1,447.3	1.45	0.171	0.303	0.348	59805	E99D		0.913
180	1,479.8	1.48	0.167	0.296	0.340	60141	EAED		0.918
181	1,513.7	1.51	0.163	0.290	0.332	60494	EC4E	37	0.923
182	1,546.1	1.55	0.160	0.284	0.325	60830	ED9E		0.928
183	1,578.7	1.58	0.157	0.278	0.319	61166	EEEE		0.933
184	1,609.4	1.61	0.154	0.273	0.313	61485	F02D		0.938
185	1,641.8	1.64	0.151	0.267	0.307	61821	F17D		0.943
186	1,675.9	1.68	0.147	0.262	0.300	62174	F2DE	38	0.949
187	1,708.3	1.71	0.145	0.257	0.295	62510	F42E		0.954
188	1,740.7	1.74	0.142	0.252	0.289	62846	F57E		0.959

189	1,417.1	1.77	0.174	0.310	0.355
190	1,443.1	1.80	0.171	0.304	0.349
191	1,470.4	1.84	0.168	0.298	0.342
192	1,498.3	1.87	0.165	0.293	0.336
193	1,522.2	1.90	0.162	0.288	0.331
194	1,546.9	1.93	0.160	0.284	0.325
195	1,572.8	1.97	0.157	0.279	0.320
196	1,600.0	2.00	0.154	0.274	0.315

63166	F6BE		0.964
63502	F80E		0.969
63855	F96F	39	0.974
64191	FABF		0.979
64527	FC0F		0.985
64846	FD4E		0.989
65182	FE9E		0.995
65535	FFFF	40	1.000

189	1,771.4	1.77	0.140	0.248	0.284
190	1,803.8	1.80	0.137	0.243	0.279
191	1,838.0	1.84	0.134	0.239	0.274
192	1,870.4	1.87	0.132	0.235	0.269
193	1,902.8	1.90	0.130	0.231	0.265
194	1,933.6	1.93	0.128	0.227	0.260
195	1,966.1	1.97	0.126	0.223	0.256
196	2,000.0	2.00	0.124	0.220	0.252

63166	F6BE		0.964
63502	F80E		0.969
63855	F96F	39	0.974
64191	FABF		0.979
64527	FC0F		0.985
64846	FD4E		0.989
65182	FE9E		0.995
65535	FFFF	40	1.000

Digital ZOOM(Extended) : x1.50

Lens			Field of View			Pelco (SX1600) : Set Zoom Position (0x00,0x4F) Query Zoom Position (0x00,0x83)			ONVIF (SX1600) Zoom control
Motor Pulse	Focal Length		Vertical	Horizontal	Diagonal	CGI (SX1600) : SetAbsoluteZoomPosition GetAbsoluteZoomPosition		CGI (SX1600) : SetZoomControl GetZoomControl	
Steps	[mm]		[degree]			[DEC]	[HEX]	[DEC]	[DEC]
1	30.0	1.00	7.910	14.030	16.090	0	0	1	0.000
2	30.7	1.24	7.730	13.730	15.740	336	150		0.005
3	31.4	1.48	7.570	13.430	15.400	672	2A0		0.010
4	32.1	1.70	7.410	13.140	15.070	991	3DF		0.015
5	32.8	1.94	7.240	12.850	14.730	1328	530		0.020
6	33.6	2.19	7.070	12.550	14.390	1680	690	2	0.026
7	34.3	2.43	6.920	12.270	14.070	2016	7E0		0.031
8	35.1	2.66	6.760	12.000	13.760	2353	931		0.036
9	35.9	2.89	6.620	11.750	13.470	2672	A70		0.041
10	36.7	3.13	6.480	11.490	13.180	3008	BC0		0.046
11	37.5	3.38	6.330	11.230	12.870	3361	D21	3	0.051
12	38.4	3.61	6.190	10.980	12.590	3697	E71		0.056
13	39.3	3.85	6.050	10.740	12.310	4033	FC1		0.062
14	40.1	4.08	5.930	10.520	12.050	4352	1100		0.066
15	41.0	4.31	5.800	10.280	11.790	4688	1250		0.072
16	42.0	4.56	5.660	10.050	11.520	5041	13B1	4	0.077
17	43.0	4.80	5.540	9.830	11.260	5377	1501		0.082
18	44.0	5.04	5.420	9.610	11.020	5713	1651		0.087
19	44.9	5.26	5.300	9.410	10.780	6033	1791		0.092
20	45.9	5.50	5.190	9.200	10.550	6369	18E1		0.097
21	47.0	5.75	5.070	8.990	10.300	6722	1A42	5	0.103
22	48.1	5.99	4.960	8.790	10.080	7058	1B92		0.108
23	49.2	6.23	4.850	8.600	9.860	7394	1CE2		0.113
24	50.3	6.45	4.750	8.420	9.650	7713	1E21		0.118
25	51.4	6.69	4.640	8.230	9.440	8049	1F71		0.123
26	52.7	6.94	4.530	8.040	9.220	8402	20D2	6	0.128
27	53.9	7.18	4.430	7.870	9.020	8738	2222		0.133
28	55.1	7.41	4.340	7.690	8.820	9074	2372		0.138
29	56.3	7.64	4.250	7.530	8.640	9393	24B1		0.143
30	57.5	7.88	4.150	7.370	8.450	9729	2601		0.148
31	58.9	8.13	4.060	7.200	8.250	10082	2762	7	0.154
32	60.2	8.36	3.970	7.040	8.070	10418	28B2		0.159
33	61.6	8.60	3.880	6.890	7.890	10754	2A02		0.164
34	63.0	8.83	3.800	6.740	7.730	11074	2B42		0.169
35	64.4	9.07	3.720	6.590	7.560	11410	2C92		0.174
36	65.9	9.32	3.630	6.440	7.380	11763	2DF3	8	0.179
37	67.4	9.55	3.550	6.300	7.220	12099	2F43		0.185
38	68.9	9.79	3.470	6.160	7.060	12435	3093		0.190
39	70.4	10.02	3.400	6.030	6.920	12754	31D2		0.195
40	72.0	10.25	3.330	5.900	6.760	13090	3322		0.200
41	73.7	10.50	3.250	5.760	6.610	13443	3483	9	0.205
42	75.4	10.74	3.180	5.640	6.460	13779	35D3		0.210
43	77.1	10.98	3.110	5.510	6.320	14115	3723		0.215
44	78.8	11.20	3.040	5.400	6.190	14435	3863		0.220
45	80.5	11.44	2.980	5.280	6.050	14771	39B3		0.225
46	82.5	11.69	2.910	5.160	5.910	15123	3B13	10	0.231
47	84.3	11.93	2.840	5.050	5.780	15460	3C64		0.236
48	86.3	12.17	2.780	4.930	5.660	15796	3DB4		0.241
49	88.1	12.39	2.720	4.830	5.540	16115	3EF3		0.246
50	90.2	12.63	2.660	4.730	5.420	16451	4043		0.251
51	92.3	12.88	2.600	4.620	5.290	16804	41A4	11	0.256
52	94.4	13.12	2.540	4.520	5.180	17140	42F4		0.262
53	96.6	13.35	2.490	4.420	5.060	17476	4444		0.267
54	98.6	13.58	2.440	4.320	4.960	17795	4583		0.272
55	100.8	13.82	2.380	4.230	4.850	18131	46D3		0.277
56	103.2	14.07	2.330	4.130	4.740	18484	4834	12	0.282
57	105.6	14.30	2.280	4.040	4.630	18820	4984		0.287
58	108.0	14.54	2.230	3.950	4.530	19156	4AD4		0.292
59	110.4	14.77	2.180	3.870	4.440	19476	4C14		0.297
60	112.9	15.01	2.130	3.780	4.340	19812	4D64		0.302
61	115.6	15.26	2.080	3.700	4.240	20165	4EC5	13	0.308
62	118.2	15.49	2.040	3.620	4.150	20501	5015		0.313
63	120.9	15.73	1.990	3.540	4.050	20837	5165		0.318
64	123.5	15.96	1.950	3.460	3.970	21156	52A4		0.323
65	126.3	16.19	1.910	3.390	3.880	21492	53F4		0.328
66	129.3	16.44	1.860	3.310	3.790	21845	5555	14	0.333
67	132.2	16.68	1.820	3.240	3.710	22181	56A5		0.338
68	135.2	16.92	1.780	3.160	3.630	22517	57F5		0.344
69	138.1	17.14	1.750	3.100	3.550	22836	5934		0.348
70	141.3	17.38	1.710	3.030	3.470	23173	5A85		0.354
71	144.6	17.63	1.670	2.960	3.390	23525	5BE5	15	0.359
72	147.9	17.87	1.630	2.900	3.320	23861	5D35		0.364
73	151.3	18.11	1.600	2.830	3.250	24198	5E86		0.369
74	154.6	18.33	1.560	2.770	3.180	24517	5FC5		0.374
75	158.1	18.57	1.530	2.710	3.110	24853	6115		0.379
76	161.9	18.82	1.490	2.650	3.040	25206	6276	16	0.385
77	165.6	19.06	1.460	2.590	2.970	25542	63C6		0.390
78	169.3	19.29	1.430	2.530	2.910	25878	6516		0.395
79	173.0	19.52	1.400	2.480	2.840	26197	6655		0.400
80	176.9	19.76	1.370	2.430	2.780	26533	67A5		0.405
81	181.1	20.01	1.340	2.370	2.720	26886	6906	17	0.410
82	185.2	20.24	1.310	2.320	2.660	27222	6A56		0.415
83	189.4	20.48	1.280	2.270	2.600	27558	6BA6		0.421
84	193.5	20.71	1.250	2.220	2.550	27878	6CE6		0.425
85	197.9	20.95	1.220	2.170	2.490	28214	6E36		0.431
86	202.7	21.19	1.200	2.120	2.430	28567	6F97	18	0.436
87	207.3	21.43	1.170	2.070	2.380	28903	70E7		0.441
88	212.0	21.67	1.140	2.030	2.330	29239	7237		0.446
89	216.6	21.90	1.120	1.990	2.280	29558	7376		0.451
90	221.5	22.13	1.090	1.940	2.230	29894	74C6		0.456
91	226.8	22.38	1.070	1.900	2.180	30247	7627	19	0.462
92	231.9	22.62	1.050	1.860	2.130	30583	7777		0.467
93	237.2	22.86	1.020	1.820	2.080	30919	78C7		0.472
94	242.3	23.08	1.000	1.780	2.040	31238	7A06		0.477
95	247.8	23.32	0.980	1.740	1.990	31574	7B56		0.482
96	253.7	23.57	0.960	1.700	1.950	31927	7CB7	20	0.487
97	259.5	23.81	0.940	1.660	1.900	32263	7E07		0.492
98	265.4	24.05	0.920	1.620	1.860	32599	7F57		0.497
99	271.1	24.27	0.900	1.590	1.820	32919	8097		0.502
100	277.3	24.51	0.880	1.560	1.780	33255	81E7		0.507
101	283.9	24.76	0.860	1.520	1.740	33608	8348	21	0.513
102	290.4	25.00	0.840	1.490	1.700	33944	8498		0.518
103	297.0	25.23	0.820	1.450	1.670	34280	85E8		0.523
104	303.4	25.46	0.800	1.420	1.630	34599	8727		0.528
105	310.2	25.70	0.780	1.390	1.600	34935	8877		0.533
106	317.7	25.95	0.770	1.360	1.560	35288	89D8	22	0.538
107	324.9	26.18	0.750	1.330	1.530	35624	8B28		0.544
108	332.3	26.42	0.730	1.300	1.490	35960	8C78		0.549
109	339.4	26.65	0.720	1.270	1.460	36280	8DB8		0.554
110	347.1	26.89	0.700	1.250	1.430	36616	8F08		0.559
111	355.4	27.13	0.690	1.220	1.400	36968	9068	23	0.564
112	363.5	27.37	0.670	1.190	1.360	37305	91B9		0.569
113	371.7	27.61	0.660	1.160	1.330	37641	9309		0.574
114	379.8	27.84	0.640	1.140	1.310	37960	9448		0.579
115	388.4	28.07	0.630	1.110	1.280	38296	9598		0.584
116	397.7	28.32	0.610	1.090	1.250	38649	96F9	24	0.590
117	406.7	28.56	0.600	1.070	1.220	38985	9849		0.595
118	416.0	28.80	0.590	1.040	1.190	39321	9999		0.600
119	425.0	29.02	0.570	1.020	1.170	39640	9AD8		0.605
120	434.6	29.26	0.560	1.000	1.140	39976	9C28		0.610
121	445.0	29.51	0.550	0.970	1.120	40329	9D89	25	0.615
122	455.1	29.75	0.540	0.950	1.090	40665	9ED9		0.621
123	465.4	29.98	0.530	0.930	1.070	41001	A029		0.626
124	475.5	30.21	0.510	0.910	1.050	41321	A169		0.631
125	486.3	30.45	0.500	0.890	1.020	41657	A2B9		0.636
126	497.9	30.70	0.490	0.870	1.000	42010	A41A	26	0.641
127	509.2	30.94	0.480	0.850	0.980	42346	A56A		0.646
128	520.8	31.17	0.470	0.830	0.960	42682	A6BA		0.651
129	532.0	31.40	0.460	0.820	0.940	43001	A7F9		0.656
130	544.1	31.64	0.450	0.800	0.920	43337	A949		0.661
131	557.1	31.89	0.440	0.780	0.890	43690	AAAA	27	0.667
132	569.7	32.12	0.430	0.760	0.880	44026	ABFA		0.672
133	582.6	32.36	0.420	0.750	0.860	44362	AD4A		0.677
134	595.2	32.59	0.410	0.730	0.840	44681	AE89		0.682
135	608.8	32.82	0.400	0.710	0.820	45018	AFDA		0.687
136	623.3	33.07	0.390	0.700	0.800	45370	B13A	28	0.692
137	637.5	33.31	0.380	0.680	0.780	45706	B28A		0.697
138	652.0	33.55	0.380	0.670	0.770	46043	B3DB		0.703
139	666.1	33.77	0.370	0.650	0.750	46362	B51A		0.707
140	681.2	34.01	0.360	0.640	0.730	46698	B66A		0.713
141	697.5	34.26	0.350	0.620	0.720	47051	B7CB	29	0.718
142	713.3	34.50	0.340	0.610	0.700	47387	B91B		0.723
143	729.5	34.74	0.340	0.600	0.690	47723	BA6B		0.728
144	745.2	34.96	0.330	0.590	0.670	48042	BBAA		0.733
145	762.2	35.20	0.320	0.570	0.660	48378	BCFA		0.738
146	780.4	35.45	0.320	0.560	0.640	48731	BE5B	30	0.744
147	798.1	35.69	0.310	0.550	0.630	49067	BFAB		0.749
148	816.2	35.92	0.300	0.530	0.610	49403	C0FB		0.754
149	833.9	36.15	0.300	0.520	0.600	49723	C23B		0.759
150	852.8	36.39	0.290	0.510	0.590	50059	C38B		0.764
151	873.2	36.64	0.280	0.500	0.570	50412	C4EC	31	0.769
152	893.0	36.88	0.280	0.490	0.560	50748	C63C		0.774
153	913.3	37.11	0.270	0.480	0.550	51084	C78C		0.779
154	933.0	37.34	0.260	0.470	0.540	51403	C8CB		0.784
155	954.2	37.58	0.260	0.460	0.530	51739	CA1B		0.789
156	977.0	37.83	0.250	0.450	0.510	52092	CB7C	32	0.795
157	999.2	38.06	0.250	0.440	0.500	52428	CCCC		0.800
158	1,021.8	38.30	0.240	0.430	0.490	52764	CE1C		0.805
159	1,043.7	38.53	0.240	0.420	0.480	53083	CF5B		0.810
160	1,067.4	38.76	0.230	0.410	0.470	53419	D0AB		0.815
161	1,093.1	39.01	0.230	0.400	0.460	53772	D20C	33	0.821
162	1,118.1	39.25	0.220	0.390	0.450	54108	D35C		0.826
163	1,143.8	39.49	0.220	0.380	0.440	54444	D4AC		0.831
164	1,168.5	39.71	0.210	0.380	0.430	54764	D5EC		0.836
165	1,194.7	39.95	0.210	0.370	0.420	55100	D73C		0.841
166	1,233.1	1.03	0.200	0.356	0.408	55453	D89D	34	0.846
167	1,272.0	1.06	0.194	0.345	0.395	55789	D9ED		0.851
168	1,310.9	1.09	0.188	0.335	0.384	56125	DB3D		0.856
169	1,347.9	1.12	0.183	0.325	0.373	56444	DC7C		0.861
170	1,386.8	1.16	0.178	0.316	0.363	56780	DDCC		0.866
171	1,427.6	1.19	0.173	0.307	0.352	57133	DF2D	35	0.872
172	1,466.4	1.22	0.169	0.299	0.343	57469	E07D		0.877
173	1,505.3	1.25	0.164	0.291	0.334	57805	E1CD		0.882
174	1,542.4	1.29	0.160	0.284	0.326	58125	E30D		0.887
175	1,581.3	1.32	0.156	0.278	0.318	58461	E45D		0.892
176	1,622.0	1.35	0.152	0.271	0.310	58813	E5BD	36	0.897
177	1,660.9	1.38	0.149	0.264	0.303	59150	E70E		0.903
178	1,699.8	1.42	0.145	0.258	0.296	59486	E85E		0.908
179	1,736.8	1.45	0.142	0.253	0.290	59805	E99D		0.913
180	1,775.7	1.48	0.139	0.247	0.284	60141	EAED		0.918
181	1,816.4	1.51	0.136	0.242	0.277	60494	EC4E	37	0.923
182	1,855.3	1.55	0.133	0.237	0.271	60830	ED9E		0.928
183	1,894.4	1.58	0.130	0.232	0.266	61166	EEEE		0.933
184	1,931.3	1.61	0.128	0.227	0.261	61485	F02D		0.938
185	1,970.1	1.64	0.125	0.223	0.256	61821	F17D		0.943
186	2,011.1	1.68	0.123	0.218	0.250	62174	F2DE	38	0.949
187	2,050.0	1.71	0.121	0.214	0.246	62510	F42E		0.954
188	2,088.9	1.74	0.118	0.210	0.241	62846	F57E		0.959

Digital ZOOM(Extended) : x1.75

Lens			Field of View			Pelco (SX1600) : Set Zoom Position (0x00,0x4F) Query Zoom Position (0x00,0x83)			ONVIF (SX1600) Zoom control
Motor Pulse	Focal Length		Vertical	Horizontal	Diagonal	CGI (SX1600) : SetAbsoluteZoomPosition GetAbsoluteZoomPosition		CGI (SX1600) : SetZoomControl GetZoomControl	
Steps	[mm]		[degree]			[DEC]	[HEX]	[DEC]	[DEC]
1	35.0	1.00	6.780	12.040	13.800	0	0	1	0.000
2	35.8	1.24	6.630	11.780	13.500	336	150		0.005
3	36.6	1.48	6.490	11.520	13.210	672	2A0		0.010
4	37.4	1.70	6.350	11.270	12.930	991	3DF		0.015
5	38.3	1.94	6.210	11.020	12.640	1328	530		0.020
6	39.2	2.19	6.060	10.770	12.340	1680	690	2	0.026
7	40.1	2.43	5.930	10.530	12.070	2016	7E0		0.031
8	41.0	2.66	5.800	10.300	11.810	2353	931		0.036
9	41.8	2.89	5.680	10.080	11.560	2672	A70		0.041
10	42.8	3.13	5.550	9.860	11.310	3008	BC0		0.046
11	43.8	3.38	5.430	9.630	11.040	3361	D21	3	0.051
12	44.8	3.61	5.310	9.420	10.800	3697	E71		0.056
13	45.8	3.85	5.190	9.210	10.560	4033	FC1		0.062
14	46.8	4.08	5.080	9.020	10.340	4352	1100		0.066
15	47.9	4.31	4.970	8.820	10.110	4688	1250		0.072
16	49.0	4.56	4.860	8.620	9.880	5041	13B1	4	0.077
17	50.1	4.80	4.750	8.430	9.660	5377	1501		0.082
18	51.3	5.04	4.640	8.240	9.450	5713	1651		0.087
19	52.4	5.26	4.550	8.070	9.250	6033	1791		0.092
20	53.6	5.50	4.450	7.890	9.050	6369	18E1		0.097
21	54.9	5.75	4.340	7.710	8.840	6722	1A42	5	0.103
22	56.1	5.99	4.250	7.540	8.650	7058	1B92		0.108
23	57.4	6.23	4.160	7.380	8.460	7394	1CE2		0.113
24	58.6	6.45	4.070	7.220	8.280	7713	1E21		0.118
25	60.0	6.69	3.980	7.060	8.100	8049	1F71		0.123
26	61.4	6.94	3.890	6.900	7.910	8402	20D2	6	0.128
27	62.8	7.18	3.800	6.750	7.740	8738	2222		0.133
28	64.2	7.41	3.720	6.600	7.570	9074	2372		0.138
29	65.6	7.64	3.640	6.460	7.410	9393	24B1		0.143
30	67.1	7.88	3.560	6.320	7.250	9729	2601		0.148
31	68.7	8.13	3.480	6.180	7.080	10082	2762	7	0.154
32	70.3	8.36	3.400	6.040	6.920	10418	28B2		0.159
33	71.9	8.60	3.330	5.910	6.770	10754	2A02		0.164
34	73.4	8.83	3.260	5.780	6.630	11074	2B42		0.169
35	75.1	9.07	3.190	5.660	6.490	11410	2C92		0.174
36	76.9	9.32	3.110	5.530	6.340	11763	2DF3	8	0.179
37	78.6	9.55	3.040	5.400	6.200	12099	2F43		0.185
38	80.4	9.79	2.980	5.290	6.060	12435	3093		0.190
39	82.1	10.02	2.920	5.180	5.930	12754	31D2		0.195
40	84.0	10.25	2.850	5.060	5.800	13090	3322		0.200
41	86.0	10.50	2.790	4.950	5.670	13443	3483	9	0.205
42	87.9	10.74	2.720	4.840	5.550	13779	35D3		0.210
43	89.9	10.98	2.660	4.730	5.420	14115	3723		0.215
44	91.9	11.20	2.610	4.630	5.310	14435	3863		0.220
45	94.0	11.44	2.550	4.530	5.190	14771	39B3		0.225
46	96.2	11.69	2.490	4.430	5.070	15123	3B13	10	0.231
47	98.4	11.93	2.440	4.330	4.960	15460	3C64		0.236
48	100.6	12.17	2.380	4.230	4.850	15796	3DB4		0.241
49	102.8	12.39	2.330	4.140	4.750	16115	3EF3		0.246
50	105.2	12.63	2.280	4.050	4.650	16451	4043		0.251
51	107.7	12.88	2.230	3.960	4.540	16804	41A4	11	0.256
52	110.1	13.12	2.180	3.870	4.440	17140	42F4		0.262
53	112.6	13.35	2.130	3.790	4.340	17476	4444		0.267
54	115.1	13.58	2.090	3.710	4.250	17795	4583		0.272
55	117.7	13.82	2.040	3.630	4.160	18131	46D3		0.277
56	120.5	14.07	2.000	3.540	4.060	18484	4834	12	0.282
57	123.2	14.30	1.950	3.470	3.970	18820	4984		0.287
58	126.0	14.54	1.910	3.390	3.890	19156	4AD4		0.292
59	128.7	14.77	1.870	3.320	3.810	19476	4C14		0.297
60	131.7	15.01	1.830	3.250	3.720	19812	4D64		0.302
61	134.8	15.26	1.790	3.170	3.640	20165	4EC5	13	0.308
62	137.9	15.49	1.750	3.100	3.560	20501	5015		0.313
63	141.0	15.73	1.710	3.030	3.480	20837	5165		0.318
64	144.0	15.96	1.670	2.970	3.410	21156	52A4		0.323
65	147.3	16.19	1.640	2.900	3.330	21492	53F4		0.328
66	150.8	16.44	1.600	2.840	3.250	21845	5555	14	0.333
67	154.3	16.68	1.560	2.780	3.180	22181	56A5		0.338
68	157.8	16.92	1.530	2.710	3.110	22517	57F5		0.344
69	161.2	17.14	1.500	2.660	3.050	22836	5934		0.348
70	164.8	17.38	1.460	2.600	2.980	23173	5A85		0.354
71	168.7	17.63	1.430	2.540	2.910	23525	5BE5	15	0.359
72	172.6	17.87	1.400	2.480	2.850	23861	5D35		0.364
73	176.5	18.11	1.370	2.430	2.790	24198	5E86		0.369
74	180.3	18.33	1.340	2.380	2.730	24517	5FC5		0.374
75	184.5	18.57	1.310	2.330	2.670	24853	6115		0.379
76	188.9	18.82	1.280	2.270	2.610	25206	6276	16	0.385
77	193.2	19.06	1.250	2.220	2.550	25542	63C6		0.390
78	197.6	19.29	1.220	2.170	2.490	25878	6516		0.395
79	201.8	19.52	1.200	2.130	2.440	26197	6655		0.400
80	206.4	19.76	1.170	2.080	2.390	26533	67A5		0.405
81	211.3	20.01	1.150	2.030	2.330	26886	6906	17	0.410
82	216.1	20.24	1.120	1.990	2.280	27222	6A56		0.415
83	221.0	20.48	1.100	1.950	2.230	27558	6BA6		0.421
84	225.8	20.71	1.070	1.900	2.180	27878	6CE6		0.425
85	230.9	20.95	1.050	1.860	2.140	28214	6E36		0.431
86	236.5	21.19	1.020	1.820	2.090	28567	6F97	18	0.436
87	241.8	21.43	1.000	1.780	2.040	28903	70E7		0.441
88	247.3	21.67	0.980	1.740	2.000	29239	7237		0.446
89	252.6	21.90	0.960	1.700	1.950	29558	7376		0.451
90	258.4	22.13	0.940	1.670	1.910	29894	74C6		0.456
91	264.5	22.38	0.920	1.630	1.870	30247	7627	19	0.462
92	270.6	22.62	0.900	1.590	1.830	30583	7777		0.467
93	276.7	22.86	0.880	1.560	1.790	30919	78C7		0.472
94	282.6	23.08	0.860	1.520	1.750	31238	7A06		0.477
95	289.1	23.32	0.840	1.490	1.710	31574	7B56		0.482
96	296.0	23.57	0.820	1.460	1.670	31927	7CB7	20	0.487
97	302.7	23.81	0.800	1.430	1.630	32263	7E07		0.492
98	309.6	24.05	0.780	1.390	1.600	32599	7F57		0.497
99	316.3	24.27	0.770	1.360	1.560	32919	8097		0.502
100	323.5	24.51	0.750	1.330	1.530	33255	81E7		0.507
101	331.2	24.76	0.730	1.300	1.490	33608	8348	21	0.513
102	338.8	25.00	0.720	1.280	1.460	33944	8498		0.518
103	346.5	25.23	0.700	1.250	1.430	34280	85E8		0.523
104	353.9	25.46	0.690	1.220	1.400	34599	8727		0.528
105	362.0	25.70	0.670	1.190	1.370	34935	8877		0.533
106	370.6	25.95	0.660	1.170	1.340	35288	89D8	22	0.538
107	379.0	26.18	0.640	1.140	1.310	35624	8B28		0.544
108	387.6	26.42	0.630	1.120	1.280	35960	8C78		0.549
109	396.0	26.65	0.620	1.090	1.250	36280	8DB8		0.554
110	405.0	26.89	0.600	1.070	1.230	36616	8F08		0.559
111	414.6	27.13	0.590	1.040	1.200	36968	9068	23	0.564
112	424.1	27.37	0.580	1.020	1.170	37305	91B9		0.569
113	433.7	27.61	0.560	1.000	1.150	37641	9309		0.574
114	443.0	27.84	0.550	0.980	1.120	37960	9448		0.579
115	453.1	28.07	0.540	0.960	1.100	38296	9598		0.584
116	464.0	28.32	0.530	0.930	1.070	38649	96F9	24	0.590
117	474.5	28.56	0.510	0.910	1.050	38985	9849		0.595
118	485.3	28.80	0.500	0.890	1.020	39321	9999		0.600
119	495.8	29.02	0.490	0.870	1.000	39640	9AD8		0.605
120	507.0	29.26	0.480	0.860	0.980	39976	9C28		0.610
121	519.1	29.51	0.470	0.840	0.960	40329	9D89	25	0.615
122	530.9	29.75	0.460	0.820	0.940	40665	9ED9		0.621
123	543.0	29.98	0.450	0.800	0.920	41001	A029		0.626
124	554.7	30.21	0.440	0.780	0.900	41321	A169		0.631
125	567.3	30.45	0.430	0.770	0.880	41657	A2B9		0.636
126	580.9	30.70	0.420	0.750	0.860	42010	A41A	26	0.641
127	594.1	30.94	0.410	0.730	0.840	42346	A56A		0.646
128	607.6	31.17	0.400	0.720	0.820	42682	A6BA		0.651
129	620.7	31.40	0.390	0.700	0.800	43001	A7F9		0.656
130	634.8	31.64	0.390	0.690	0.790	43337	A949		0.661
131	649.9	31.89	0.380	0.670	0.770	43690	AAAA	27	0.667
132	664.7	32.12	0.370	0.650	0.750	44026	ABFA		0.672
133	679.8	32.36	0.360	0.640	0.730	44362	AD4A		0.677
134	694.4	32.59	0.350	0.630	0.720	44681	AE89		0.682
135	710.3	32.82	0.350	0.610	0.700	45018	AFDA		0.687
136	727.2	33.07	0.340	0.600	0.690	45370	B13A	28	0.692
137	743.7	33.31	0.330	0.590	0.670	45706	B28A		0.697
138	760.7	33.55	0.320	0.570	0.660	46043	B3DB		0.703
139	777.1	33.77	0.320	0.560	0.640	46362	B51A		0.707
140	794.7	34.01	0.310	0.550	0.630	46698	B66A		0.713
141	813.7	34.26	0.300	0.540	0.610	47051	B7CB	29	0.718
142	832.2	34.50	0.300	0.520	0.600	47387	B91B		0.723
143	851.1	34.74	0.290	0.510	0.590	47723	BA6B		0.728
144	869.5	34.96	0.280	0.500	0.580	48042	BBAA		0.733
145	889.2	35.20	0.280	0.490	0.560	48378	BCFA		0.738
146	910.4	35.45	0.270	0.480	0.550	48731	BE5B	30	0.744
147	931.1	35.69	0.260	0.470	0.540	49067	BFAB		0.749
148	952.3	35.92	0.260	0.460	0.530	49403	C0FB		0.754
149	972.9	36.15	0.250	0.450	0.520	49723	C23B		0.759
150	994.9	36.39	0.250	0.440	0.500	50059	C38B		0.764
151	1,018.7	36.64	0.240	0.430	0.490	50412	C4EC	31	0.769
152	1,041.8	36.88	0.240	0.420	0.480	50748	C63C		0.774
153	1,065.5	37.11	0.230	0.410	0.470	51084	C78C		0.779
154	1,088.5	37.34	0.230	0.400	0.460	51403	C8CB		0.784
155	1,113.3	37.58	0.220	0.390	0.450	51739	CA1B		0.789
156	1,139.8	37.83	0.220	0.380	0.440	52092	CB7C	32	0.795
157	1,165.7	38.06	0.210	0.380	0.430	52428	CCCC		0.800
158	1,192.1	38.30	0.210	0.370	0.420	52764	CE1C		0.805
159	1,217.7	38.53	0.200	0.360	0.410	53083	CF5B		0.810
160	1,245.4	38.76	0.200	0.350	0.400	53419	D0AB		0.815
161	1,275.2	39.01	0.190	0.340	0.390	53772	D20C	33	0.821
162	1,304.5	39.25	0.190	0.340	0.390	54108	D35C		0.826
163	1,334.4	39.49	0.190	0.330	0.380	54444	D4AC		0.831
164	1,363.3	39.71	0.180	0.320	0.370	54764	D5EC		0.836
165	1,393.8	39.95	0.180	0.310	0.360	55100	D73C		0.841
166	1,438.6	1.03	0.172	0.305	0.350	55453	D89D	34	0.846
167	1,484.0	1.06	0.167	0.296	0.339	55789	D9ED		0.851
168	1,529.4	1.09	0.162	0.287	0.329	56125	DB3D		0.856
169	1,572.6	1.12	0.157	0.279	0.320	56444	DC7C		0.861
170	1,617.9	1.16	0.153	0.271	0.311	56780	DDCC		0.866
171	1,665.5	1.19	0.148	0.264	0.302	57133	DF2D	35	0.872
172	1,710.8	1.22	0.144	0.257	0.294	57469	E07D		0.877
173	1,756.2	1.25	0.141	0.250	0.287	57805	E1CD		0.882
174	1,799.4	1.29	0.137	0.244	0.280	58125	E30D		0.887
175	1,844.8	1.32	0.134	0.238	0.273	58461	E45D		0.892
176	1,892.3	1.35	0.131	0.232	0.266	58813	E5BD	36	0.897
177	1,937.7	1.38	0.128	0.227	0.260	59150	E70E		0.903
178	1,983.1	1.42	0.125	0.221	0.254	59486	E85E		0.908
179	2,026.3	1.45	0.122	0.217	0.249	59805	E99D		0.913
180	2,071.7	1.48	0.119	0.212	0.243	60141	EAED		0.918
181	2,119.2	1.51	0.117	0.207	0.238	60494	EC4E	37	0.923
182	2,164.5	1.55	0.114	0.203	0.233	60830	ED9E		0.928
183	2,210.2	1.58	0.112	0.199	0.228	61166	EEEE		0.933
184	2,253.1	1.61	0.110	0.195	0.224	61485	F02D		0.938
185	2,298.5	1.64	0.108	0.191	0.219	61821	F17D		0.943
186	2,346.3	1.68	0.105	0.187	0.215	62174	F2DE	38	0.949
187	2,391.7	1.71	0.103	0.184	0.211	62510	F42E		0.954
188	2,437.0	1.74	0.101	0.180	0.207	62846	F57E		0.959

189	2,125.7	1.77	0.116	0.207	0.237
190	2,164.6	1.80	0.114	0.203	0.233
191	2,205.6	1.84	0.112	0.199	0.228
192	2,244.5	1.87	0.110	0.196	0.224
193	2,283.3	1.90	0.108	0.192	0.221
194	2,320.4	1.93	0.107	0.189	0.217
195	2,359.3	1.97	0.105	0.186	0.214
196	2,400.0	2.00	0.103	0.183	0.210

63166	F6BE		0.964
63502	F80E		0.969
63855	F96F	39	0.974
64191	FABF		0.979
64527	FC0F		0.985
64846	FD4E		0.989
65182	FE9E		0.995
65535	FFFF	40	1.000

189	2,480.0	1.77	0.100	0.177	0.203
190	2,525.4	1.80	0.098	0.174	0.200
191	2,573.1	1.84	0.096	0.171	0.196
192	2,618.5	1.87	0.094	0.168	0.192
193	2,663.9	1.90	0.093	0.165	0.189
194	2,707.1	1.93	0.091	0.162	0.186
195	2,752.5	1.97	0.090	0.160	0.183
196	2,800.0	2.00	0.088	0.157	0.180

63166	F6BE		0.964
63502	F80E		0.969
63855	F96F	39	0.974
64191	FABF		0.979
64527	FC0F		0.985
64846	FD4E		0.989
65182	FE9E		0.995
65535	FFFF	40	1.000

Lens			Field of View			Digital ZOOM(Extended) : x2.00			
						Pelco (SX1600) : Set Zoom Position (0x00,0x4F) Query Zoom Position (0x00,0x83)			ONVIF (SX1600) Zoom control
Motor Pulse	Focal Length		Vertical	Horizontal	Diagonal	CGI (SX1600) : SetAbsoluteZoomPosition GetAbsoluteZoomPosition		CGI (SX1600) : SetZoomControl GetZoomControl	
Steps	[mm]		[degree]			[DEC]	[HEX]	[DEC]	[DEC]
1	40.0	1.00	5.930	10.540	12.080	0	0	1	0.000
2	40.9	1.24	5.800	10.310	11.820	336	150		0.005
3	41.9	1.48	5.680	10.080	11.560	672	2A0		0.010
4	42.8	1.70	5.560	9.870	11.320	991	3DF		0.015
5	43.7	1.94	5.430	9.650	11.060	1328	530		0.020
6	44.8	2.19	5.310	9.420	10.810	1680	690	2	0.026
7	45.8	2.43	5.190	9.220	10.570	2016	7E0		0.031
8	46.8	2.66	5.080	9.010	10.340	2353	931		0.036
9	47.8	2.89	4.970	8.830	10.120	2672	A70		0.041
10	48.9	3.13	4.860	8.630	9.900	3008	BC0		0.046
11	50.0	3.38	4.750	8.430	9.670	3361	D21	3	0.051
12	51.2	3.61	4.640	8.250	9.460	3697	E71		0.056
13	52.4	3.85	4.540	8.070	9.250	4033	FC1		0.062
14	53.5	4.08	4.450	7.900	9.060	4352	1100		0.066
15	54.7	4.31	4.350	7.720	8.860	4688	1250		0.072
16	56.0	4.56	4.250	7.540	8.650	5041	13B1	4	0.077
17	57.3	4.80	4.160	7.380	8.460	5377	1501		0.082
18	58.6	5.04	4.060	7.220	8.280	5713	1651		0.087
19	59.9	5.26	3.980	7.070	8.100	6033	1791		0.092
20	61.2	5.50	3.890	6.910	7.920	6369	18E1		0.097
21	62.7	5.75	3.800	6.750	7.740	6722	1A42	5	0.103
22	64.1	5.99	3.720	6.600	7.570	7058	1B92		0.108
23	65.6	6.23	3.640	6.460	7.400	7394	1CE2		0.113
24	67.0	6.45	3.560	6.320	7.250	7713	1E21		0.118
25	68.6	6.69	3.480	6.180	7.090	8049	1F71		0.123
26	70.2	6.94	3.400	6.040	6.930	8402	20D2	6	0.128
27	71.8	7.18	3.330	5.910	6.780	8738	2222		0.133
28	73.4	7.41	3.250	5.780	6.630	9074	2372		0.138
29	75.0	7.64	3.190	5.660	6.490	9393	24B1		0.143
30	76.7	7.88	3.120	5.530	6.350	9729	2601		0.148
31	78.5	8.13	3.040	5.410	6.200	10082	2762	7	0.154
32	80.3	8.36	2.980	5.290	6.060	10418	28B2		0.159
33	82.2	8.60	2.910	5.170	5.930	10754	2A02		0.164
34	83.9	8.83	2.850	5.060	5.810	11074	2B42		0.169
35	85.8	9.07	2.790	4.950	5.680	11410	2C92		0.174
36	87.9	9.32	2.720	4.840	5.550	11763	2DF3	8	0.179
37	89.8	9.55	2.660	4.730	5.430	12099	2F43		0.185
38	91.9	9.79	2.610	4.630	5.310	12435	3093		0.190
39	93.8	10.02	2.550	4.530	5.200	12754	31D2		0.195
40	96.0	10.25	2.500	4.430	5.080	13090	3322		0.200
41	98.3	10.50	2.440	4.330	4.960	13443	3483	9	0.205
42	100.5	10.74	2.380	4.230	4.860	13779	35D3		0.210
43	102.8	10.98	2.330	4.140	4.750	14115	3723		0.215
44	105.0	11.20	2.280	4.050	4.650	14435	3863		0.220
45	107.4	11.44	2.230	3.970	4.550	14771	39B3		0.225
46	109.9	11.69	2.180	3.870	4.440	15123	3B13	10	0.231
47	112.4	11.93	2.130	3.790	4.340	15460	3C64		0.236
48	115.0	12.17	2.090	3.710	4.250	15796	3DB4		0.241
49	117.5	12.39	2.040	3.630	4.160	16115	3EF3		0.246
50	120.2	12.63	2.000	3.550	4.070	16451	4043		0.251
51	123.1	12.88	1.950	3.470	3.980	16804	41A4	11	0.256
52	125.9	13.12	1.910	3.390	3.890	17140	42F4		0.262
53	128.7	13.35	1.870	3.320	3.800	17476	4444		0.267
54	131.5	13.58	1.830	3.250	3.720	17795	4583		0.272
55	134.5	13.82	1.790	3.180	3.640	18131	46D3		0.277
56	137.7	14.07	1.750	3.100	3.560	18484	4834	12	0.282
57	140.8	14.30	1.710	3.030	3.480	18820	4984		0.287
58	144.0	14.54	1.670	2.970	3.400	19156	4AD4		0.292
59	147.1	14.77	1.640	2.910	3.330	19476	4C14		0.297
60	150.5	15.01	1.600	2.840	3.260	19812	4D64		0.302
61	154.1	15.26	1.560	2.780	3.180	20165	4EC5	13	0.308
62	157.6	15.49	1.530	2.720	3.110	20501	5015		0.313
63	161.1	15.73	1.500	2.660	3.050	20837	5165		0.318
64	164.6	15.96	1.460	2.600	2.980	21156	52A4		0.323
65	168.4	16.19	1.430	2.540	2.920	21492	53F4		0.328
66	172.4	16.44	1.400	2.480	2.850	21845	5555	14	0.333
67	176.3	16.68	1.370	2.430	2.790	22181	56A5		0.338
68	180.3	16.92	1.340	2.380	2.730	22517	57F5		0.344
69	184.2	17.14	1.310	2.330	2.670	22836	5934		0.348
70	188.4	17.38	1.280	2.280	2.610	23173	5A85		0.354
71	192.8	17.63	1.250	2.220	2.550	23525	5BE5	15	0.359
72	197.2	17.87	1.220	2.170	2.490	23861	5D35		0.364
73	201.7	18.11	1.200	2.130	2.440	24198	5E86		0.369
74	206.1	18.33	1.170	2.080	2.390	24517	5FC5		0.374
75	210.8	18.57	1.150	2.040	2.340	24853	6115		0.379
76	215.9	18.82	1.120	1.990	2.280	25206	6276	16	0.385
77	220.8	19.06	1.100	1.950	2.230	25542	63C6		0.390
78	225.8	19.29	1.070	1.900	2.180	25878	6516		0.395
79	230.6	19.52	1.050	1.860	2.140	26197	6655		0.400
80	235.8	19.76	1.030	1.820	2.090	26533	67A5		0.405
81	241.4	20.01	1.000	1.780	2.040	26886	6906	17	0.410
82	246.9	20.24	0.980	1.740	2.000	27222	6A56		0.415
83	252.6	20.48	0.960	1.700	1.950	27558	6BA6		0.421
84	258.0	20.71	0.940	1.670	1.910	27878	6CE6		0.425
85	263.9	20.95	0.920	1.630	1.870	28214	6E36		0.431
86	270.2	21.19	0.900	1.590	1.830	28567	6F97	18	0.436
87	276.4	21.43	0.880	1.560	1.790	28903	70E7		0.441
88	282.7	21.67	0.860	1.520	1.750	29239	7237		0.446
89	288.7	21.90	0.840	1.490	1.710	29558	7376		0.451
90	295.3	22.13	0.820	1.460	1.670	29894	74C6		0.456
91	302.3	22.38	0.800	1.430	1.630	30247	7627	19	0.462

92	309.2	22.62	0.780	1.390	1.600	30583	7777		0.467
93	316.2	22.86	0.770	1.360	1.560	30919	78C7		0.472
94	323.0	23.08	0.750	1.330	1.530	31238	7A06		0.477
95	330.4	23.32	0.740	1.310	1.500	31574	7B56		0.482
96	338.3	23.57	0.720	1.280	1.460	31927	7CB7	20	0.487
97	345.9	23.81	0.700	1.250	1.430	32263	7E07		0.492
98	353.8	24.05	0.690	1.220	1.400	32599	7F57		0.497
99	361.5	24.27	0.670	1.190	1.370	32919	8097		0.502
100	369.7	24.51	0.660	1.170	1.340	33255	81E7		0.507
101	378.5	24.76	0.640	1.140	1.310	33608	8348	21	0.513
102	387.2	25.00	0.630	1.120	1.280	33944	8498		0.518
103	396.0	25.23	0.610	1.090	1.250	34280	85E8		0.523
104	404.5	25.46	0.600	1.070	1.230	34599	8727		0.528
105	413.7	25.70	0.590	1.050	1.200	34935	8877		0.533
106	423.5	25.95	0.580	1.020	1.170	35288	89D8	22	0.538
107	433.2	26.18	0.560	1.000	1.150	35624	8B28		0.544
108	443.0	26.42	0.550	0.980	1.120	35960	8C78		0.549
109	452.6	26.65	0.540	0.960	1.100	36280	8DB8		0.554
110	462.8	26.89	0.530	0.940	1.070	36616	8F08		0.559
111	473.9	27.13	0.510	0.910	1.050	36968	9068	23	0.564
112	484.6	27.37	0.500	0.890	1.020	37305	91B9		0.569
113	495.6	27.61	0.490	0.870	1.000	37641	9309		0.574
114	506.3	27.84	0.480	0.860	0.980	37960	9448		0.579
115	517.9	28.07	0.470	0.840	0.960	38296	9598		0.584
116	530.2	28.32	0.460	0.820	0.940	38649	96F9	24	0.590
117	542.3	28.56	0.450	0.800	0.920	38985	9849		0.595
118	554.7	28.80	0.440	0.780	0.900	39321	9999		0.600
119	566.6	29.02	0.430	0.770	0.880	39640	9AD8		0.605
120	579.5	29.26	0.420	0.750	0.860	39976	9C28		0.610
121	593.3	29.51	0.410	0.730	0.840	40329	9D89	25	0.615
122	606.7	29.75	0.400	0.720	0.820	40665	9ED9		0.621
123	620.5	29.98	0.390	0.700	0.800	41001	A029		0.626
124	633.9	30.21	0.390	0.690	0.790	41321	A169		0.631
125	648.4	30.45	0.380	0.670	0.770	41657	A2B9		0.636
126	663.9	30.70	0.370	0.650	0.750	42010	A41A	26	0.641
127	679.0	30.94	0.360	0.640	0.730	42346	A56A		0.646
128	694.4	31.17	0.350	0.630	0.720	42682	A6BA		0.651
129	709.3	31.40	0.350	0.610	0.700	43001	A7F9		0.656
130	725.4	31.64	0.340	0.600	0.690	43337	A949		0.661
131	742.7	31.89	0.330	0.590	0.670	43690	AAAA	27	0.667
132	759.6	32.12	0.320	0.570	0.660	44026	ABFA		0.672
133	776.9	32.36	0.320	0.560	0.640	44362	AD4A		0.677
134	793.6	32.59	0.310	0.550	0.630	44681	AE89		0.682
135	811.7	32.82	0.300	0.540	0.620	45018	AFDA		0.687
136	831.1	33.07	0.300	0.520	0.600	45370	B13A	28	0.692
137	850.0	33.31	0.290	0.510	0.590	45706	B28A		0.697
138	869.3	33.55	0.280	0.500	0.580	46043	B3DB		0.703
139	888.1	33.77	0.280	0.490	0.560	46362	B51A		0.707
140	908.3	34.01	0.270	0.480	0.550	46698	B66A		0.713
141	930.0	34.26	0.260	0.470	0.540	47051	B7CB	29	0.718
142	951.1	34.50	0.260	0.460	0.530	47387	B91B		0.723
143	972.7	34.74	0.250	0.450	0.510	47723	BA6B		0.728
144	993.7	34.96	0.250	0.440	0.500	48042	BBAA		0.733
145	1,016.2	35.20	0.240	0.430	0.490	48378	BCFA		0.738
146	1,040.5	35.45	0.240	0.420	0.480	48731	BE5B	30	0.744
147	1,064.1	35.69	0.230	0.410	0.470	49067	BFAB		0.749
148	1,088.3	35.92	0.230	0.400	0.460	49403	C0FB		0.754
149	1,111.8	36.15	0.220	0.390	0.450	49723	C23B		0.759
150	1,137.1	36.39	0.220	0.380	0.440	50059	C38B		0.764
151	1,164.2	36.64	0.210	0.380	0.430	50412	C4EC	31	0.769
152	1,190.7	36.88	0.210	0.370	0.420	50748	C63C		0.774
153	1,217.7	37.11	0.200	0.360	0.410	51084	C78C		0.779
154	1,244.0	37.34	0.200	0.350	0.400	51403	C8CB		0.784
155	1,272.3	37.58	0.190	0.340	0.390	51739	CA1B		0.789
156	1,302.7	37.83	0.190	0.340	0.390	52092	CB7C	32	0.795
157	1,332.2	38.06	0.190	0.330	0.380	52428	CCCC		0.800
158	1,362.4	38.30	0.180	0.320	0.370	52764	CE1C		0.805
159	1,391.6	38.53	0.180	0.310	0.360	53083	CF5B		0.810
160	1,423.3	38.76	0.170	0.310	0.350	53419	D0AB		0.815
161	1,457.4	39.01	0.170	0.300	0.340	53772	D20C	33	0.821
162	1,490.9	39.25	0.170	0.290	0.340	54108	D35C		0.826
163	1,525.0	39.49	0.160	0.290	0.330	54444	D4AC		0.831
164	1,558.0	39.71	0.160	0.280	0.320	54764	D5EC		0.836
165	1,592.9	39.95	0.160	0.280	0.320	55100	D73C		0.841
166	1,644.1	1.03	0.150	0.267	0.306	55453	D89D	34	0.846
167	1,696.0	1.06	0.146	0.259	0.297	55789	D9ED		0.851
168	1,747.8	1.09	0.141	0.251	0.288	56125	DB3D		0.856
169	1,797.2	1.12	0.138	0.244	0.280	56444	DC7C		0.861
170	1,849.1	1.16	0.134	0.237	0.272	56780	DDCC		0.866
171	1,903.4	1.19	0.130	0.231	0.265	57133	DF2D	35	0.872
172	1,955.2	1.22	0.126	0.225	0.258	57469	E07D		0.877
173	2,007.1	1.25	0.123	0.219	0.251	57805	E1CD		0.882
174	2,056.5	1.29	0.120	0.214	0.245	58125	E30D		0.887
175	2,108.3	1.32	0.117	0.208	0.239	58461	E45D		0.892
176	2,162.7	1.35	0.114	0.203	0.233	58813	E5BD	36	0.897
177	2,214.5	1.38	0.112	0.198	0.227	59150	E70E		0.903
178	2,266.4	1.42	0.109	0.194	0.222	59486	E85E		0.908
179	2,315.7	1.45	0.107	0.190	0.218	59805	E99D		0.913
180	2,367.6	1.48	0.104	0.186	0.213	60141	EAED		0.918
181	2,421.9	1.51	0.102	0.181	0.208	60494	EC4E	37	0.923
182	2,473.8	1.55	0.100	0.178	0.204	60830	ED9E		0.928
183	2,525.9	1.58	0.098	0.174	0.199	61166	EEEE		0.933
184	2,575.0	1.61	0.096	0.171	0.196	61485	F02D		0.938
185	2,626.9	1.64	0.094	0.167	0.192	61821	F17D		0.943
186	2,681.5	1.68	0.092	0.164	0.188	62174	F2DE	38	0.949
187	2,733.3	1.71	0.090	0.161	0.184	62510	F42E		0.954
188	2,785.2	1.74	0.089	0.158	0.181	62846	F57E		0.959
189	2,834.3	1.77	0.087	0.155	0.178	63166	F6BE		0.964
190	2,886.1	1.80	0.086	0.152	0.175	63502	F80E		0.969
191	2,940.7	1.84	0.084	0.149	0.171	63855	F96F	39	0.974
192	2,992.6	1.87	0.083	0.147	0.168	64191	FABF		0.979
193	3,044.4	1.90	0.081	0.144	0.166	64527	FC0F		0.985
194	3,093.8	1.93	0.080	0.142	0.163	64846	FD4E		0.989
195	3,145.7	1.97	0.079	0.140	0.160	65182	FE9E		0.995
196	3,200.0	2.00	0.077	0.137	0.158	65535	FFFF	40	1.000

		Digital Zoom:OFF									Digital ZOOM (Extended) : x1.25									Digital ZOOM (Extended)			
Focal Leng	mm	20	35.1	61.5	107.9	189.3	331.9	582.1	1081.3	1600	25	43.875	76.875	134.875	236.625	414.875	727.625	1351.625	2000	30	52.65	92.25	161.85
Zoom Pos	HEX	0000	20D2	41A4	6276	8348	A41A	C4EC	E5BD	FFFF	0000	20D2	41A4	6276	8348	A41A	C4EC	E5BD	FFFF	0000	20D2	41A4	6276
Control Re	Pulse	14	35	108	330	1004	3061	6852	9585	9585	14	57	189	913	3061	8647	9585	9585	9585	14	62	330	2107
		Focus Position [HEX]									Focus Position [HEX]												Focus
	10	966B	988C	9112	7A60	5558	32BA				966B	96E3	87D1	58A8	32BA					966B	9664	7A5F	42AE
	12	97A4	9ABE	9657	85C9	692C	4DD4				97A4	9A04	8FF0	6BCA	4DD4					97A4	99B1	85C9	5A8C
	14	980C	9C32	9A2D	8E07	7775	617E	1D69			980C	9C7E	958E	798F	617E					980C	9C4A	8E07	6BBA
	17	98DD	9DFD	9E4D	96B6	86BD	768B	46B4			98DD	9ED4	9BA0	8842	768B	05C2				98DD	9EE5	96B6	7E2C
	20	9945	9F16	A0F4	9CCF	9179	856A	5C6D	2A53	2A53	9945	A075	9FF0	9298	856A	3B6F	2A53	2A53	2A53	9945	A08E	9CCF	8B29
	24	9A16	A02E	A39B	A2B3	9BAE	9398	712A	4616	4616	9A16	A224	A3FF	9C66	9398	54D0	4616	4616	4616	9A16	A27D	A2B3	9788
	28	9A7E	A0E6	A5A7	A6C2	A312	9DD1	8020	5A21	5A21	9A7E	A31F	A6D3	A384	9DD1	671D	5A21	5A21	5A21	9A7E	A382	A6C2	A063
	33		A1A3	A769	AA92	A9BB	A720	8DD7	6C83	6C83		A449	A95E	A9EC	A720	77EC	6C83	6C83	6C83		A4CB	AA92	A88D
	40	9AE6	A25A	A8E9	AE5A	B045	B053	9B60	7EAE	7EAE	9AE6	A545	ABE9	B034	B053	8884	7EAE	7EAE	7EAE	9AE6	A5C9	AE5A	B07C
	47	9B4F	A2B6	AA18	B0DF	B4EF	B6CE	A4F2	8B89	8B89	9B4F	A5EC	ADB6	B4AF	B6CE	943E	8B89	8B89	8B89	9B4F	A675	B0DF	B621
	56		A317	AB3E	B338	B928	BCC3	ADC2	976C	976C		A66F	AF7A	B8BF	BCC3	9F19	976C	976C	976C		A71A	B338	BB4D
	67		A373	AC23	B555	BCD9	C1EC	B561	A1AA	A1AA		A717	B0BF	BC4D	C1EC	A871	A1AA	A1AA	A1AA		A7BE	B555	BFC3
	79	9BB7	A3CE	AD00	B6D5	BFAB	C5E8	BB46	A9A0	A9A0	9BB7	A79A	B1CF	BF06	C5E8	AFB0	A9A0	A9A0	A9A0	9BB7	A863	B6D5	C337
	94		A42A	AD9C	B84C	C229	C96E	C08E	B0BE	B0BE		A7EE	B2CC	C169	C96E	B62F	B0BE	B0BE	B0BE		A8BD	B84C	C64E
	110		A430	AE2F	B95B	C420	CC32	C499	B633	B633		A841	B392	C34C	CC32	BB2A	B633	B633	B633		A90F	B95B	C8A3
	130		A486	AE79	BA69	C5DA	CEA8	C843	BB29	BB29		A895	B451	C4EE	CEA8	BFAF	BB29	BB29	BB29		A961	BA69	CAC9
	160		A48B	AF0C	BB6D	C7B3	D135	CC0F	C048	C048		A8C5	B50E	C6BA	D135	C45A	C048	C048	C048		A9B3	BB6E	CD03
	190		A4E2	AF5E	BC13	C8EF	D2F7	CEA7	C3CC	C3CC		A8E9	B58D	C7E7	D2F7	C78D	C3CC	C3CC	C3CC		A9BB	BC13	CE7C
	220		A4E7	AFA8	BC85	C9D0	D438	D08D	C65B	C65B		A918	B5D6	C8BD	D438	C9E1	C65B	C65B	C65B		AA06	BC85	CF9C
	270			AFB0	BD2B	CAE6	D5B5	D2C2	C95C	C95C		A93D	B61E	C9CA	D5B5	CCA0	C95C	C95C	C95C		AA0D	BD2B	D0E6
ect Distanc	320			AFF1	BD93	CBA2	D6C2	D44B	CB71	CB71		A96C	B693	CA80	D6C2	CE82	CB71	CB71	CB71		AA58	BD93	D1D1
	380			B03B	BDFC	CC40	D7A0	D597	CD35	CD35			B6D3	CB17	D7A0	D01D	CD35	CD35	CD35		AA5F	BDFC	D289
	450			B043	BE39	CCC0	D85E	D6B1	CEAC	CEAC			B6DC	CB96	D85E	D174	CEAC	CEAC	CEAC			BE39	D335
	530				BE6D	CD21	D8EF	D791	CFE0	CFE0			B71B	CBF6	D8EF	D289	CFE0	CFE0	CFE0			BE6D	D3B8
	630			B084	BEA2	CD81	D97D	D85E	D0F4	D0F4			B724	CC4C	D97D	D387	D0F4	D0F4	D0F4			BEA2	D426
	750			B08D	BED6	CDDC	D9F3	D90A	D1DA	D1DA			B75B	CCA2	D9F2	D458	D1DA	D1DA	D1DA			BED6	D494
	890				BF0A	CE1F	DA4D	D996	D29D	D29D			B764	CCE2	DA4C	D50A	D29D	D29D	D29D			BF0A	D4D8
	1100				BF13	CE5C	DAB0	DA2A	D35F	D35F			B799	CD22	DAB0	D5BC	D35F	D35F	D35F			BF13	D532
	1300				BF3E	CE98	DAEB	DA86	D3E2	D3E2			B7A2	CD59	DAEB	D633	D3E2	D3E2	D3E2			BF3F	D570
	1500				BF47	CEB6	DB22	DACC	D441	D441				CD79	DB22	D687	D441	D441	D441			BF47	D59A
	1800				BF73	CEDB	DB50	DB19	D4A4	D4A4				CD99	DB50	D6E7	D4A4	D4A4	D4A4			BF73	D5CA
	2100				BF7C	CEF9	DB79	DB51	D4F1	D4F1				CDAF	DB79	D727	D4F1	D4F1	D4F1			BF7C	D5DE
	2500					CF00	DB98	DB82	D535	D535				CDB9	DB98	D767	D535	D535	D535				D5F8
	3000					CF18	DBB7	DBAF	D574	D574				CDD8	DBB7	D79E	D574	D574	D574				D61D
	3500					CF36	DBD3	DBCF	D59D	D59D				CDEF	DBD3	D7C5	D59D	D59D	D59D				D622
	4200					CF3D	DBE1	DBF3	D5CA	D5CA					DBE1	D7ED	D5CA	D5CA	D5CA				D637
	5000						DBF3	DC09	D5EE	D5EE				CDF8	DBF3	D80F	D5EE	D5EE	D5EE				D64C
	6000					CF54	DC00	DC1F	D60E	D60E				CE0F	DC00	D829	D60E	D60E	D60E				D661
	7100					CF5B	DC0E	DC32	D625	D625					DC0E	D841	D625	D625	D625				
	8400						DC1C	DC42	D637	D637					DC1C	D850	D637	D637	D637				D666
	Inf	9C20	A543	B0D7	BFB0	CF79	DC49	DC8F	D6A3	D6A3	9C20	A9C0	B7E2	CE2F	DC49	D8B3	D6A3	D6A3	D6A3	9C20	AAB2	BFB0	D690

:		x1.50			Digital ZOOM (Extended) :				x1.75				Digital ZOOM (Extended) :				x2.00			
283.95	497.85	873.15	1621.95	2400	35	61.425	107.625	188.825	331.275	580.825	1018.675	1892.275	2800	40	70.2	123	215.8	378.6	663.8	1164.2	2162.6	3200
8348	A41A	C4EC	E5BD	FFFF	0000	20D2	41A4	6276	8348	A41A	C4EC	E5BD	FFFF	0000	20D2	41A4	6276	8348	A41A	C4EC	E5BD	FFFF
6852	9585	9585	9585	9585	14	98	575	4857	9585	9585	9585	9585	9585	14	108	1003	6851	9585	9585	9585	9585	9585
s Position [HEX]					Focus Position [HEX]									Focus Position [HEX]								
					966B	9220	68C2	27D5						966B	9112	555A						
					97A4	970D	785E	4514						97A4	9657	692D						
1D65					980C	9AA1	8388	5A4A						980C	9A2D	7776	1D78					
46B3					98DD	9E62	8F7E	710D						98DD	9E4D	86BE	46B9					
5C6C	2A53	2A53	2A53	2A53	9945	A0E7	97D0	8137	2A53	2A53	2A53	2A53	2A53	9945	A0F4	9179	5C71	2A53	2A53	2A53	2A53	2A53
7129	4616	4616	4616	4616	9A16	A36C	9FCF	9099	4616	4616	4616	4616	4616	9A16	A39B	9BAF	712D	4616	4616	4616	4616	4616
8020	5A21	5A21	5A21	5A21	9A7E	A53E	A578	9BAA	5A21	5A21	5A21	5A21	5A21	9A7E	A5A7	A313	8023	5A21	5A21	5A21	5A21	5A21
8DD6	6C83	6C83	6C83	6C83		A6E2	AA9F	A5D4	6C83	6C83	6C83	6C83	6C83		A769	A9BB	8DD9	6C83	6C83	6C83	6C83	6C83
9B60	7EAE	7EAE	7EAE	7EAE	9AE6	A859	AFC4	AFD2	7EAE	7EAE	7EAE	7EAE	7EAE	9AE6	A8E9	B045	9B63	7EAE	7EAE	7EAE	7EAE	7EAE
A4F1	8B89	8B89	8B89	8B89	9B4F	A967	B349	B6DF	8B89	8B89	8B89	8B89	8B89	9B4F	AA18	B4EF	A4F4	8B89	8B89	8B89	8B89	8B89
ADC2	976C	976C	976C	976C		AA76	B69D	BD65	976C	976C	976C	976C	976C		AB3E	B928	ADC4	976C	976C	976C	976C	976C
B561	A1AA	A1AA	A1AA	A1AA		AB57	B96E	C2FE	A1AA	A1AA	A1AA	A1AA	A1AA		AC23	BCD9	B563	A1AA	A1AA	A1AA	A1AA	A1AA
BB45	A9A0	A9A0	A9A0	A9A0	9BB7	AC1A	BB9A	C759	A9A0	A9A0	A9A0	A9A0	A9A0	9BB7	AD00	BFAB	BB47	A9A0	A9A0	A9A0	A9A0	A9A0
C08E	B0BE	B0BE	B0BE	B0BE		ACB0	BD96	CB37	B0BE	B0BE	B0BE	B0BE	B0BE		AD9C	C228	C08F	B0BE	B0BE	B0BE	B0BE	B0BE
C499	B633	B633	B633	B633		AD28	BF17	CE32	B633	B633	B633	B633	B633		AE2F	C420	C49B	B633	B633	B633	B633	B633
C842	BB29	BB29	BB29	BB29		AD91	C06F	D0E3	BB29	BB29	BB29	BB29	BB29		AE78	C5DA	C844	BB29	BB29	BB29	BB29	BB29
CC0F	C048	C048	C048	C048		AE09	C1C6	D3AE	C048	C048	C048	C048	C048		AF0C	C7B3	CC10	C048	C048	C048	C048	C048
CEA7	C3CC	C3CC	C3CC	C3CC		AE55	C2C4	D598	C3CC	C3CC	C3CC	C3CC	C3CC		AF5E	C8EF	CEA8	C3CC	C3CC	C3CC	C3CC	C3CC
D08C	C65B	C65B	C65B	C65B		AE81	C370	D6FB	C65B	C65B	C65B	C65B	C65B		AFA7	C9CF	D08D	C65B	C65B	C65B	C65B	C65B
D2C2	C95C	C95C	C95C	C95C		AEA0	C445	D89D	C95C	C95C	C95C	C95C	C95C		AFB0	CAE6	D2C3	C95C	C95C	C95C	C95C	C95C
D44B	CB71	CB71	CB71	CB71		AEEB	C4C8	D9BE	CB71	CB71	CB71	CB71	CB71		AFF1	CBA2	D44C	CB71	CB71	CB71	CB71	CB71
D597	CD35	CD35	CD35	CD35		AF17	C543	DAB3	CD35	CD35	CD35	CD35	CD35		B03B	CC40	D598	CD35	CD35	CD35	CD35	CD35
D6B1	CEAC	CEAC	CEAC	CEAC		AF36	C5BE	DB7B	CEAC	CEAC	CEAC	CEAC	CEAC		B043	CCBF	D6B1	CEAC	CEAC	CEAC	CEAC	CEAC
D791	CFE0	CFE0	CFE0	CFE0			C610	DC27	CFE0	CFE0	CFE0	CFE0	CFE0			CD20	D792	CFE0	CFE0	CFE0	CFE0	CFE0
D85E	D0F4	D0F4	D0F4	D0F4		AF63	C641	DCB8	D0F4	D0F4	D0F4	D0F4	D0F4		B084	CD81	D85F	D0F4	D0F4	D0F4	D0F4	D0F4
D909	D1DA	D1DA	D1DA	D1DA			C693	DD38	D1DA	D1DA	D1DA	D1DA	D1DA		B08D	CDDB	D90A	D1DA	D1DA	D1DA	D1DA	D1DA
D996	D29D	D29D	D29D	D29D			C6C4	DDA3	D29D	D29D	D29D	D29D	D29D			CE1F	D996	D29D	D29D	D29D	D29D	D29D
DA29	D35F	D35F	D35F	D35F			C6ED	DE10	D35F	D35F	D35F	D35F	D35F			CE5B	DA2A	D35F	D35F	D35F	D35F	D35F
DA86	D3E2	D3E2	D3E2	D3E2			C716	DE50	D3E2	D3E2	D3E2	D3E2	D3E2			CE98	DA87	D3E2	D3E2	D3E2	D3E2	D3E2
DACC	D441	D441	D441	D441			C73F	DE86	D441	D441	D441	D441	D441			CEB6	DACD	D441	D441	D441	D441	D441
DB19	D4A4	D4A4	D4A4	D4A4			C747	DEBD	D4A4	D4A4	D4A4	D4A4	D4A4			CEDB	DB1A	D4A4	D4A4	D4A4	D4A4	D4A4
DB50	D4F1	D4F1	D4F1	D4F1			C768	DEE2	D4F1	D4F1	D4F1	D4F1	D4F1			CEF9	DB51	D4F1	D4F1	D4F1	D4F1	D4F1
DB82	D535	D535	D535	D535			C770	DF0D	D535	D535	D535	D535	D535			CEFF	DB83	D535	D535	D535	D535	D535
DBAF	D574	D574	D574	D574			C791	DF29	D574	D574	D574	D574	D574			CF17	DBAF	D574	D574	D574	D574	D574
DBCF	D59D	D59D	D59D	D59D				DF43	D59D	D59D	D59D	D59D	D59D			CF35	DBD0	D59D	D59D	D59D	D59D	D59D
DBF3	D5CA	D5CA	D5CA	D5CA			C799	DF59	D5CA	D5CA	D5CA	D5CA	D5CA			CF3C	DBF4	D5CA	D5CA	D5CA	D5CA	D5CA
DC09	D5EE	D5EE	D5EE	D5EE				DF71	D5EE	D5EE	D5EE	D5EE	D5EE				DC09	D5EE	D5EE	D5EE	D5EE	D5EE
DC1F	D60E	D60E	D60E	D60E				DF7C	D60E	D60E	D60E	D60E	D60E			CF54	DC20	D60E	D60E	D60E	D60E	D60E
DC32	D625	D625	D625	D625				DF8D	D625	D625	D625	D625	D625			CF5A	DC33	D625	D625	D625	D625	D625
DC42	D637	D637	D637	D637				DF97	D637	D637	D637	D637	D637				DC43	D637	D637	D637	D637	D637
DC8F	D6A3	D6A3	D6A3	D6A3	9C20	AFAE	C7C2	DFCD	D6A3	D6A3	D6A3	D6A3	D6A3	9C20	B0D6	CF78	DC90	D6A3	D6A3	D6A3	D6A3	D6A3

	Model			SX800/SX801									SX1600			
	Protocol / FW Ver			v1.00	v1.01	v1.20	v1.30	v1.31	v1.40	v1.50	v1.60	v2.00	v2.12	v1.00	Alternate command	Notes
	CMND1	CMND2	Function													
Standard Command	-	-		✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔		
Extended Command	0x00	0x25	Set Zoom Speed	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	Set Zoom Speed Ex	Recommended to use alternative command.
	0x00	0x27	Set Focus Speed	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	Set Focus Speed Ex	Recommended to use alternative command.
	0x00	0x2B	Auto Focus on/off	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔		
	0x00	0x2D	Auto Iris on/off	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔		
	0x00	0x2F	AGC auto/on/off	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔		
	0x00	0x31	Backlight compensation on/off	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔		
	0x00	0x4F	Set Zoom Position	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔		
	0x00	0x67	Set Remote Baud Rate	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔		
	0xXX	0x77	Time Set Opcode	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔		
	0x00	0x55	Query Zoom Position			✔	✔	✔	✔	✔	✔	✔	✔	✔		
FF Extended Command	0x00	0x81	Query Focus Position	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔		
	0x00	0x83	Query Zoom Position	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔		
	0x00	0x89	Query Serial Number	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔		
	0x00	0x8B	Query FW Version	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔		There are parameter differences for each model.
	0x00	0x8D	Query Lens Status	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔		
	0x00	0x8F	Set Focus Position	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔		
	0x00	0x91	Set Manual Iris	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔		There are parameter differences for each model.
	0x00	0x93	Set Shutter Limit on Auto	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔		
	0x00	0x95	Set Manual Shutter Speed	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔		
	0x00	0x97	Query Manual Shutter Speed	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔		
	0x00	0x99	Set Manual ISO	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔		
	0x00	0x9B	Query Manual ISO	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔		
	0x00	0x9D	Query Manual Iris	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔		There are parameter differences for each model.
	0x00	0xA1	Query Protocol Version											✔		New command for SX1600
	0x00	0xAD	Query Manual Setting	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔		**See Table 1 for details**
Original Command1	0xF0	0x03	Set AF Area	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔		Set Focus Area Select	Obsolete command. Please use the new alternative command.
	0xF0	0x05	Set AF Sensitivity	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔		
	0xF0	0x07	One-push AF	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔		
	0xF0	0x0D	Set Auto Day/Night Control Mode	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔		Set Day to Night Threshold Set Night to Day Threshold	Obsolete command. Please use the new alternative command.
	0xF0	0x0F	Set Manual Day/Night	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔		Set DayNight Mode	Obsolete command. Please use the new alternative command.
	0xF0	0x11	Set Infrared WaveLength	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔		
	0xF0	0x13	Set OIS Mode	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔		
	0xF0	0x17	Set Photo Mode Preset	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔		
	0xF0	0x19	Set DayNight Controll by External	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔		There are parameter differences for each model.
	0xF0	0x1D	Query Photo Setting	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔		**See Table 2 for details**
Original Command2	0xF0	0x21	Set VLC Filter	✔	✔ ※	✔	✔	✔	✔	✔	✔	✔	✔		Set Optical Filter Day Set Optical Filter Night	※ Add the new argument Obsolete command. Please use the new alternative command.
	0xF0	0x23	Set WideDynamicRange	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔		
	0xF0	0x27	Set DeHeatHaze Mode	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔		
	0xF0	0x29	Set Defogging Mode	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔		
	0xF0	0x2B	Set Brightness Level	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔		Set Brightness Level Fine	Obsolete command. Please use the new alternative command.
	0xF0	0x2D	Set Contrast Level	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔		Set Contrast Level Fine	Obsolete command. Please use the new alternative command.
	0xF0	0x2F	Set ColorSaturation Level	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔		Set ColorSaturation Level Fine	Obsolete command. Please use the new alternative command.
	0xF0	0x31	Set Sharpness Level	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔		Set Sharpness Level Fine	Obsolete command. Please use the new alternative command.
	0xF0	0x33	Set ColorTemperature on whiteBalance	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔		
	0xF0	0x35	Set Select WhiteBalance	✔	✔	✔	✔	✔	✔	✔	✔	✔ ※	✔	✔		※ Add the new argument
	0xF0	0x37	Set Digital Zoom	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔ ※	✔		※ Add the new argument
	0xF0	0x39	Set NR Level	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔		
	0xF0	0x3D	Query ImageQuality Setting	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔		**See Table 3 for details**
Original Command3	0xF0	0x43	Set DayTime Display	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔		
	0xF0	0x45	Set DisplayPosition of DayTime	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔		
	0xF0	0x47	Set Title Display	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔		
	0xF0	0x4B	Set Display Position of Title	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔		
	0xF0	0x4D	Set ID Display	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔		
	0xF0	0x4F	Set DisplayPosition of ID	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔		
	0xF0	0x51	Set Center Position Display	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔		
	0xF0	0x55	SetAntialiasing						✔	✔	✔	✔	✔	✔		
	0xF0	0x5D	Query Display Setting	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔		**See Table 4 for details**

Original Command4	0xF0	0x61	Set DisplayMode of time	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔			
	0xF0	0x63	Set DisplayMode of YMD	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔			
	0xF0	0x67	Set Video Mode	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔			
	0xF0	0x69	Set HD Format	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔			
	0xF0	0x6B	Set VideoDisplay Mode	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔			
	0xF0	0x6F	Set RS485 ID	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔			
	0xF0	0x73	Set Termination for RS485	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔			
	0xF0	0x77	Set RecordingMode on SDcard	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔			
	0xF0	0x79	Set Display SDcard Capacity Remaining	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔			
	0xF0	0x7B	Format SDcard	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔			
	0xF0	0x7D	Download Firmware	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔			
	0xF0	0x7F	Record LogData on SDcard	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔			
	0xF0	0x81	Preset parameters	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔			
	0xF0	0x83	Reboot	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔			
	0xF0	0x85	Set Language	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔			
	0xF0	0x8D	Query Operation Setting	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔			**See Table 5 for details**
Original Command5	0xF0	0x91	Set EncodeMode	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔			
	0xF0	0x93	Record LiveView on SDcard	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔			
	0xF0	0x95	Set 1st file of playing Movie	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔			
	0xF0	0x97	Play Movie from SDcard	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔			
	0xF0	0x99	Delete Movie from SDcard	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔			
	0xF0	0x9B	Select Movie mode Play mode	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔			
	0xF0	0xA7	Set SDI ON MENU OK	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔			
	0xF0	0xA9	Set Direction	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔			
	0xF0	0xAB	Set Back CMD	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔			
	0xF0	0xAD	Query Key Setting	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔			**See Table 6 for details**
Original Command6	0xF0	0xB1	Query Number of Movies on SDcard	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔			
	0xF0	0xB5	Query Year of Movie on SDcard	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔			
	0xF0	0xB9	Query MonthDay of Movie on SDcard	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔			
	0xF0	0xBD	Query HourMinute of Movie on SDcard	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔			
Original Command7	0xF0	0xD1	Query LogData	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔			There are parameter differences for each model.
Original Command8	0xF0	0xEB	Set Brightness Level Fine									✔	✔	✔			
	0xF0	0xED	Set Contrast Level Fine									✔	✔	✔			
	0xF0	0xEF	Set ColorSaturation Level Fine									✔	✔	✔			
	0xF0	0xF1	Set Sharpness Level Fine									✔	✔	✔			
	0xF0	0xF5	Set WhiteBalance Shift Red Fine									✔	✔	✔			
	0xF0	0xF7	Set WhiteBalance Shift Blue Fine									✔	✔	✔			
	0xF0	0xFD	Query ImageQuality Setting Fine									✔	✔	✔			**See Table 7 for details**
Original Command9	0xF1	0x01	Set DayNight Mode								✔	✔	✔	✔			
	0xF1	0x03	Set Day to Night Threshold								✔	✔	✔	✔			
	0xF1	0x05	Set Night to Day Threshold								✔	✔	✔	✔			
	0xF1	0x07	Set DayNight Auto Delay								✔	✔	✔	✔			
	0xF1	0x09	Set Day Start Time								✔	✔	✔	✔			
	0xF1	0x0B	Set Night Start Time								✔	✔	✔	✔			
	0xF1	0x0D	Set Optical Filter Day								✔	✔	✔	✔			
	0xF1	0x0F	Set Optical Filter Night								✔	✔	✔	✔			
	0xF1	0x1D	Query DayNight Setting Ex								✔	✔	✔	✔			**See Table 8 for details**
Original Command10	0xF1	0x25	Set Zoom Speed Ex									✔	✔	✔			
	0xF1	0x27	Set Focus Speed Ex									✔	✔	✔			
	0xF1	0x21	Set Digital Zoom Ex									✔	✔	✔			
	0xF1	0x2D	Query Zoom Focus Speed Setting Ex									✔	✔	✔			**See Table 9 for details**
Original Command11	0xF2	0x01	Set Focus Area Select											✔			New command for SX1600
	0xF2	0x03	Set Focus Area Position											✔			New command for SX1600
	0xF2	0x05	Set Focus Area Start Position											✔			New command for SX1600
	0xF2	0x07	Set Focus Area End Position											✔			New command for SX1600
	0xF2	0x09	Query Focus Area Setting											✔			New command for SX1600
	0xF2	0x0B	Query Focus Area Position											✔			New command for SX1600

Table 1		SX800/SX801										SX1600		
Protocol / FW Ver		v1.00	v1.01	v1.20	v1.30	v1.31	v1.40	v1.50	v1.60	v2.00	v2.12	v1.00	Alternate command	Notes
CMND2	Function													
0x25	Query Zoom Speed	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	Query Zoom Speed Ex	Recommended to use alternative command.
0x27	Query Focus Speed	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	Query Focus Speed Ex	Recommended to use alternative command.
0x2B	Query Auto Focus	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔		
0x2D	Query Auto Iris	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔		
0x2F	Query AGC	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔		
0x31	Query Backlight	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔		
0x4F	Query Zoom Position	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔		
0x67	Query Baud Rate	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔		
0x8F	Query Focus Position	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔		
0x91	Query Manual Iris	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔		
0x93	Query Shutter Limit on Auto	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔		
0x95	Query Manual Shutter Speed	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔		
0x99	Query Manual ISO	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔		

Table 2		SX800/SX801										SX1600		
0x03	Query AF Area	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔		Query Focus Area Setting Query Focus Area Position	Obsolete command. Please use the new alternative command.
0x05	Query AF Sensitivity	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔		
0x07	Query One-push AF	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔		
0x0D	Query Auto Day/Night Control Mode	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔		Query DayNight Setting Ex	Obsolete command. Please use the new alternative command.
0x0F	Query Manual Day/Night	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔		Query DayNight Setting Ex	Obsolete command. Please use the new alternative command.
0x11	Query Infrared WaveLength	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔		
0x13	Query OIS Mode	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔		
0x17	Query Photo Mode Preset	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔		
0x19	Query DayNight Controll by External	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔		

Table 3		SX800/SX801										SX1600		
0x21	Query VLC Filter	✔	✔ ※	✔	✔	✔	✔	✔	✔	✔	✔		Query Optical Filter Day Query Optical Filter Night	Obsolete command. Please use the new alternative command.
0x23	Query Wide DynamicRange	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔		
0x27	Query DeHeatHaze Mode	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔		
0x29	Query Defogging Mode	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔		
0x2B	Query Brightness Level	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔		Query Brightness Level Fine	Obsolete command. Please use the new alternative command.
0x2D	Query Contrast Level	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔		Query Contrast Level Fine	Obsolete command. Please use the new alternative command.
0x2F	Query ColorSaturation Level	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔		Query ColorSaturation Level Fine	Obsolete command. Please use the new alternative command.
0x31	Query Sharpness Level	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔		Query Sharpness Level Fine	Obsolete command. Please use the new alternative command.
0x33	Query ColorTemperature on whiteBalance	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔		
0x35	Query Select WhiteBalance	✔	✔	✔	✔	✔	✔	✔	✔	✔ ※	✔	✔		※ Add the new argument
0x37	Query Digital Zoom	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔ ※	✔		※ Add the new argument
0x39	Query NR Level	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔		

Table 4		SX800/SX801										SX1600		
0x43	Query DayTime Display	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔		
0x45	Query DisplayPosition of DayTime	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔		
0x47	Query Title Display	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔		
0x4B	Query Display Position of Title	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔		
0x4D	Query ID Display	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔		

0x4F	Query DisplayPosition of ID	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔		
0x51	Query Center Position Display	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔		
0x53	Query Display Zoom bar & AF Frame						✔	✔	✔	✔	✔	✔		
0x55	Query Antialiasing						✔	✔	✔	✔	✔	✔		

Table 5		SX800/SX801										SX1600		
0x61	Query DisplayMode of time	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔		
0x63	Query DisplayMode of YMD	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔		
0x67	Query Video Mode	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔		
0x69	Query HD Format	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔		
0x6B	Query VideoDisplay Mode	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔		
0x6F	Query RS485 ID	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔		
0x73	Query Termination for RS485	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔		
0x77	Query RecordingMode on SDcard	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔		
0x79	Query Display SDcard Capacity Remaining	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔		
0x7B	Query Format SDcard	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔		
0x7F	Query Record LogData on SDcard	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔		
0x81	Query Preset parameters	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔		
0x85	Query Language	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔		
0x8B	Query Sdcard Status	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔		

Table 6		SX800/SX801										SX1600		
0x91	Query EncodeMode	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔		
0x93	Query Record LiveView on SDcard	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔		
0x95	Query 1st file of playing Movie	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔		
0x97	Query Play Movie from SDcard	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔		
0x99	Query Delete Movie from SDcard	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔		
0x9B	Query Select Movie mode Play mode	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔		
0xA7	Query SDI ON MENU OK	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔		
0xA9	Query Direction	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔		
0xAB	Query Back CMD	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔		

Table 7		SX800/SX801										SX1600		
0xEB	Query Brightness Level Fine									✔	✔	✔		
0xED	Query Contrast Level Fine									✔	✔	✔		
0xEF	Query ColorSaturation Level Fine									✔	✔	✔		
0xF1	Query Sharpness Level Fine									✔	✔	✔		
0xF5	Query WhiteBalance Shift Red Fine									✔	✔	✔		
0xF7	Query WhiteBalance Shift Blue Fine									✔	✔	✔		

Table 8		SX800/SX801										SX1600		
0x01	Query Night Mode								✔	✔	✔	✔		
0x03	Query Day to Night Threshold								✔	✔	✔	✔		
0x05	Query Night to Day Threshold								✔	✔	✔	✔		
0x07	Query DayNight Auto Delay								✔	✔	✔	✔		
0x09	Query Day Start Time								✔	✔	✔	✔		
0x0B	Query Night Start Time								✔	✔	✔	✔		
0x0D	Query Optical Filter Day								✔	✔	✔	✔		
0x0F	Query Optical Filter Night								✔	✔	✔	✔		

Table 9		SX800/SX801										SX1600		
0x21	Query Digital Zoom Ex									✔	✔	✔		
0x25	Query Zoom Speed Ex									✔	✔	✔		
0x27	Query Focus Speed Ex									✔	✔	✔		